

Enhancing urban **heat grid** development through improved communication

Exploring communication strategies for better
technology adoption among tenants in social housing

Stef Gitzels - 4866150
TU Delft - AR3MBE100

First mentor:	Ir. E. Mlecnik
Second mentor:	K. (Queena) Qian
Third mentor:	Yu Li

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Introduction

01

UN COP21

Temperature rise of a maximum of 1,5 degrees

02

Energy usage

Heating is one of the most prominent factors in which energy is used

03

Heat grids

Heat grids are becoming more significant due to its green alternative to gas

04

Tenants

Social housing as a 'startmotor', how to get tenants on board?

Introduction

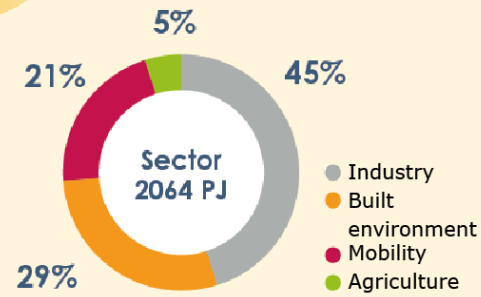
02

Energy usage

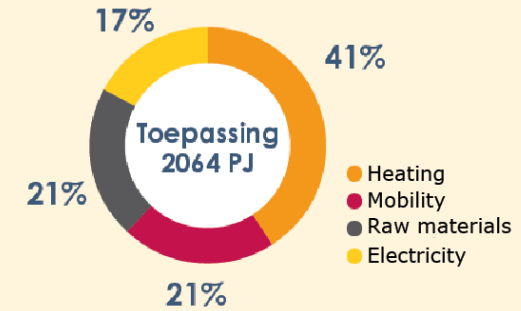
Heating is one of the most prominent factors in which energy is used



Energy usage per sector and per use



- Industry
- Built environment
- Mobility
- Agriculture



- Heating
- Mobility
- Raw materials
- Electricity

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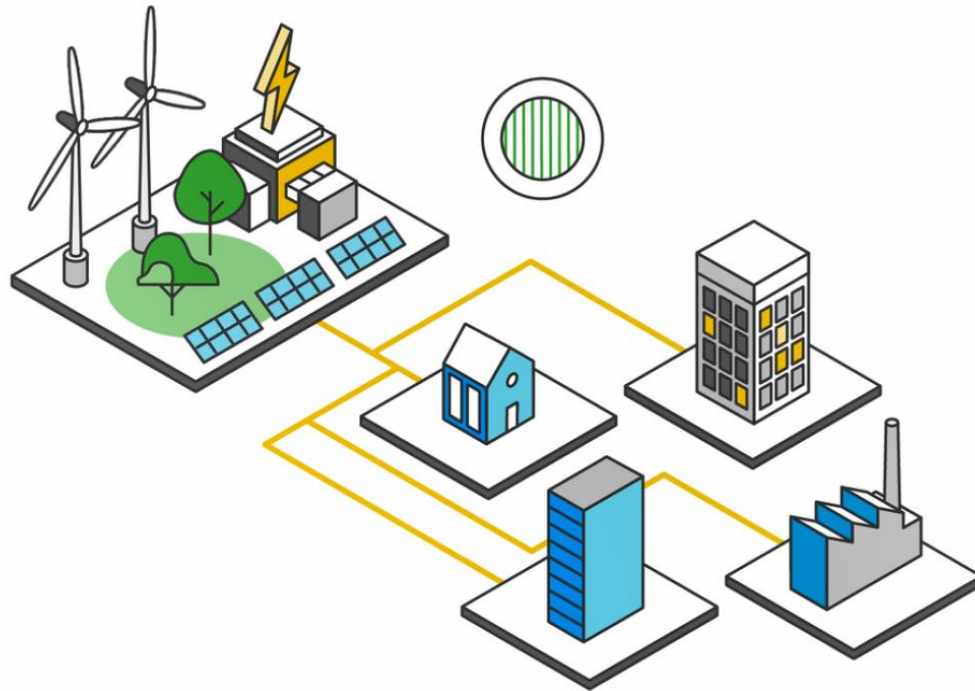
Social housing as a 'startmotor', how to get tenants on board?

Introduction

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Heat grids

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Introduction

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Heat grids

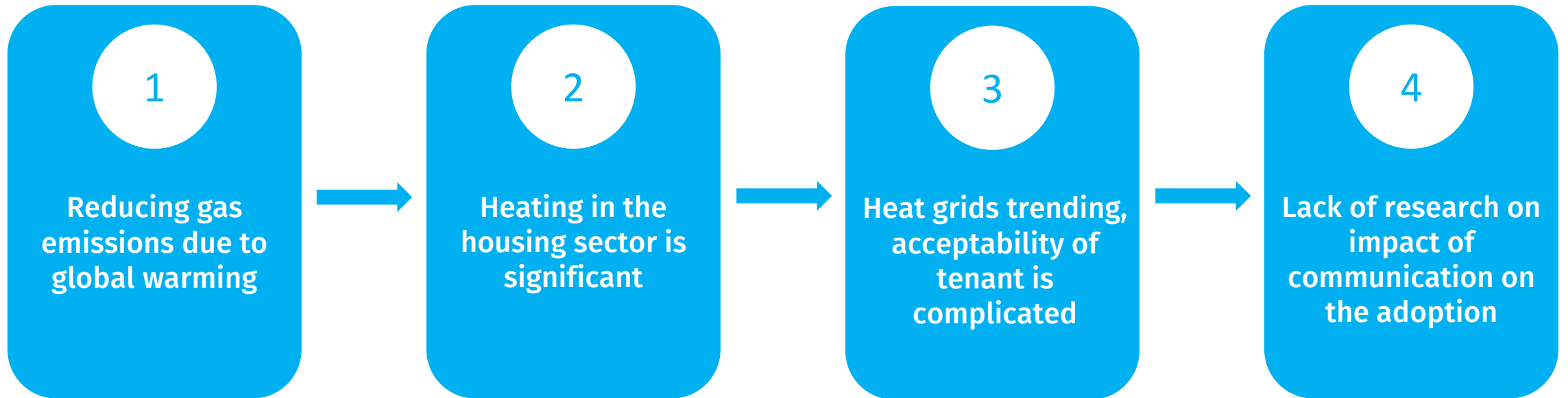
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Tenants

Social housing as a 'startmotor', how to get tenants on board?

Problem statement



Research aims

1. Identifying the current openness of tenants to heat grids and the barriers they encounter
2. Developing an overview on how communication strategies could be improved
3. Enhancing stakeholder collaboration to improve communication

Main research question

How can actively involved stakeholders enhance communication to improve the adoption of heat grids among housing association tenants?

Sub-questions

SQ1

What is the current level of adoption and openness to new technology of tenants in heat grid projects?

SQ2

What are the barriers encountered by tenants in the adoption of heat grids?

SQ3

What role do the actively involved stakeholders have in facilitating and communicating technological knowledge to tenants?

SQ4

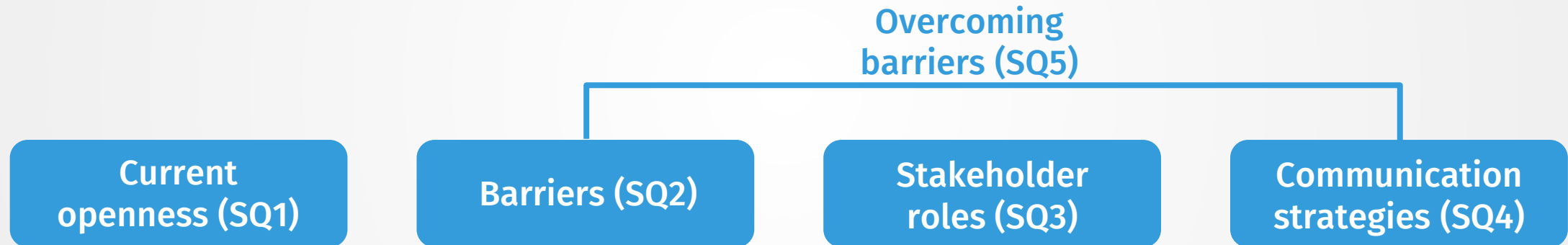
What communication methods do stakeholders believe would best improve adoption among tenants in heat grid projects?

SQ5

What communication approaches can be used to overcome the barriers regarding the adoption of heat grids?

Breakdown

Improving adoption of
heat grids by tenants



Enhancing
communication

Research methods



Literature review

Reading and analyzing academic papers to develop a theoretical background



Intercept interviews

Identifying the current openness to new technology and communication



Case studies

Comparing different communication strategies within the same setting to see the structure and outcome



















Interviews

Conversations with engaged stakeholders to validate literature and address several communication strategies



Stakeholders **involved**

Stakeholders (communication to tenants on district level)

Central governments		Design companies		 Likely
Local authorities		Construction companies		
Nonprofit housing developers		Material suppliers		 Rahter unlikely
Philanthropic organizations		Financial institutions		
R&D institutions		Energy cooperatives		
Private housing developers		Energy suppliers		
Consulting companies		End-users		

Case studies

01

Population:
Over 500.000

Scope:
600 units –
Central entrance

Phase:
Execution

Interviewees:
Housing association
Municipality
Energy company
Supporting instance

Residents committee:
Yes



02

Population:
Over 70.000

Scope:
1800 units –
Single entrance

Phase:
Execution

Interviewees:
Housing association
Municipality
Energy company
Supporting instance

Residents committee:
No

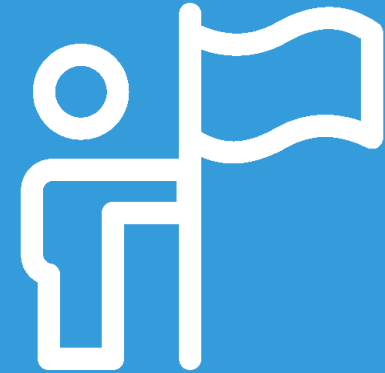


Case studies

01



02



Interviews



Organization:	Role:	Case:
Housing association	Projectmanager	1
Housing association	Projectmanager	2
Housing association	Communication advisor	2
Municipality	Area manager	1
Municipality	Communication advisor	2
Energy company	Participation manager	1
Energy company	Area manager	2
Supporting instance	Program worker	1
Supporting instance	Social worker	2

Sub-question 1

What is the current level of adoption and openness to new technology of tenants in heat grid projects?

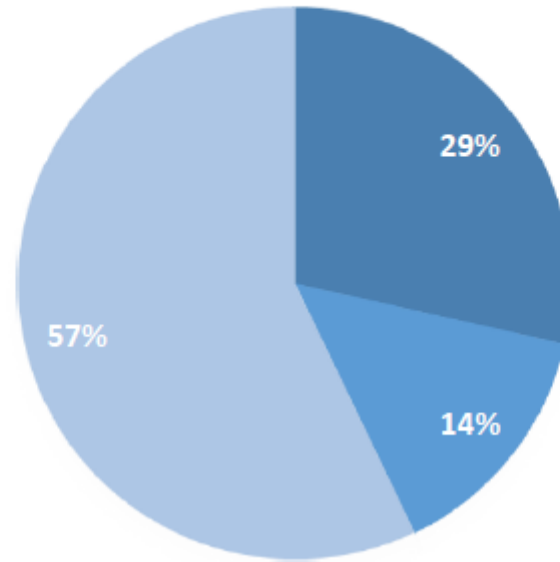


Literature review

Openness

PERCENTAGE OF HOUSING STOCK

■ Housing associations ■ Private and commercial renters ■ Owners



Intercept interviews



Location 1	Location 1	Location 2	Location 2
Market	Supermarket	Mall	Supermarket
10:00-12:00	16:00-18:00	10:00-12:00	16:00-18:00
7 people	5 people	9 people	6 people



Results

Intercept interviews

01

What do you know about heat grids?

- Awareness low
- 'Sustainability'

Question 1	Counts
Not that much	12
Do not really care	6
Something with sustainability	6
Costs	4
Different kind of heating	3
Disturbance	3
Gas-free	3
Difficult to understand	2

02

What is your opinion on how your housing association talks about this?

- Moderately satisfied
- Clarity can be better

Question 2	Counts
It is okay	11
I do not really know	6
It is nice	5
Not much communication	5
Visiting is helpful	5
It is too difficult	4
It is too much	2

03

How could this communication be improved?

- 'It's okay'
- Not engaged

Question 3	Counts
I think it is okay	8
I do not know what to improve	7
Make it more easy	6
Not that much	6
Communicate more often	5
Less information	2
Use pictures	2

Sub-question 2

What are the barriers encountered by tenants in the adoption of heat grids?



Literature review

Barriers

Barriers in technology adoption

Social
barriers

Behavioral
barriers

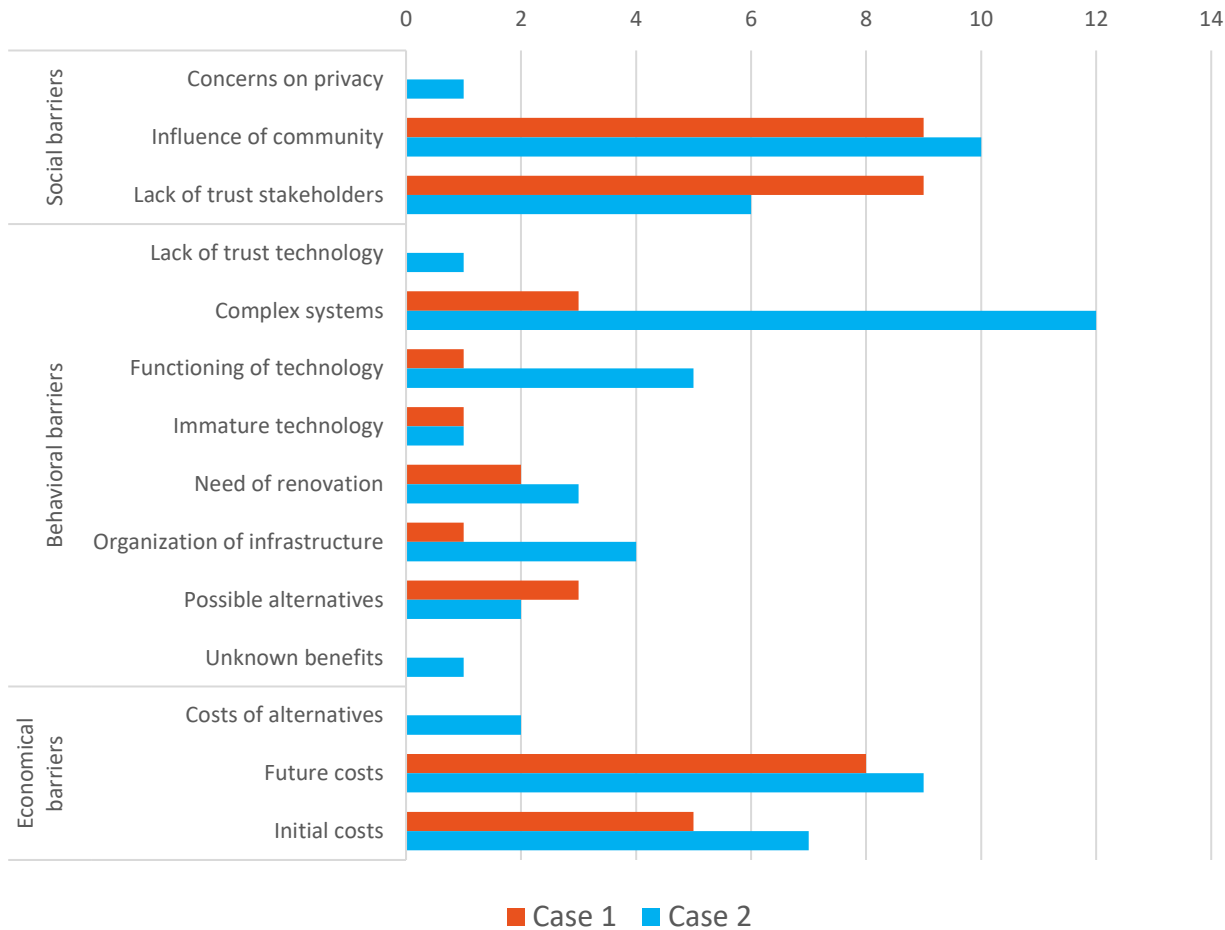
Economical
barriers



Results

Case 1 & Case 2 - Barriers

Encountered barriers per case



- Relatively low counts
- Biggest difference due to residents committee
- New barriers; legal & political
- Influence of the narrative



Sub-question 3

What role do the actively involved stakeholders have in facilitating and communicating technological knowledge to tenants?



Literature review

Stakeholders

	Stakeholder 1	Stakeholder 2	Stakeholder 3	Stakeholder 4	Stakeholder 5	Stakeholder 6
Planning	R	C	S	A	S	C
Feasibility	R	C	S	A	S	C
Design	R	C	S	A	S	C
Execution	R	C	S	A	S	C
Operating	R	C	S	A	S	C

R	A	S	C	I
Responsible	Accountable	Support	Consulted	Informed

Case 1

	Project manager (HA)	Area manager (M)	Communication advisor (M)	Program manager (CC)	Participation manager (EC)	Residents committee	Tenants
Planning	R	C	S	S	C	C	C
Feasibility	R	C	S	S	S	C	C
Design	R	C	S	S	C	C	C
Execution	S	C	C		R	C	C
Operating	S	C	C		R	C	C

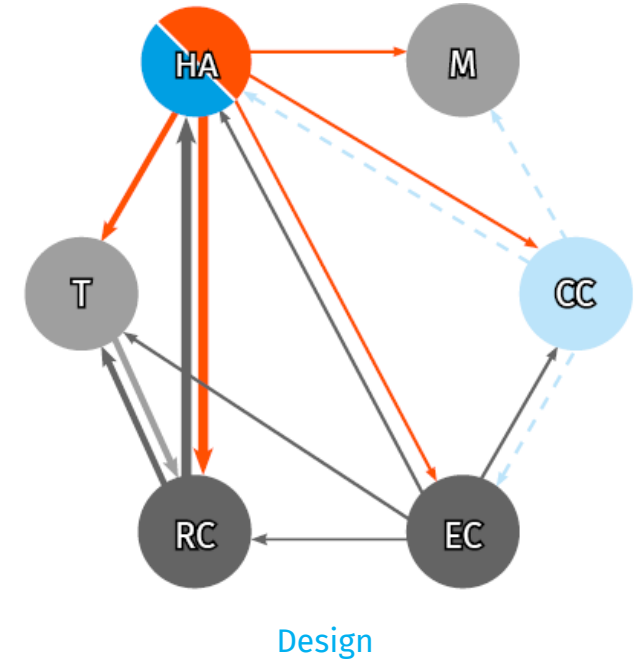
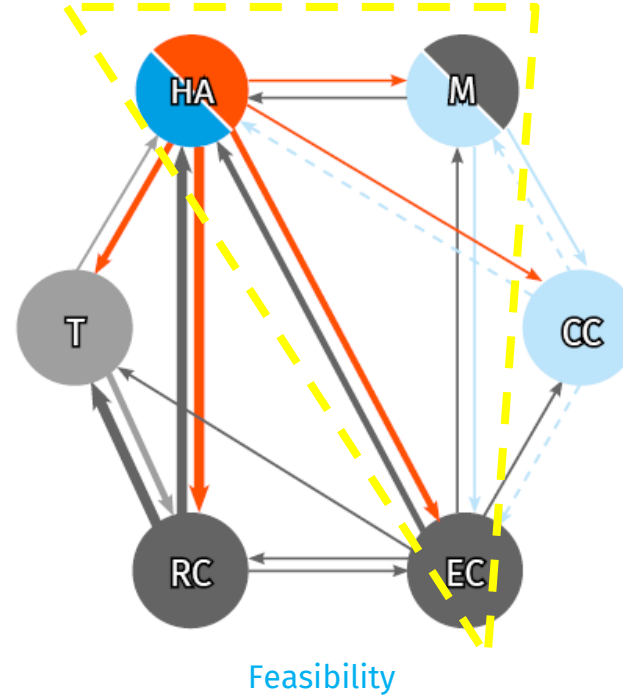
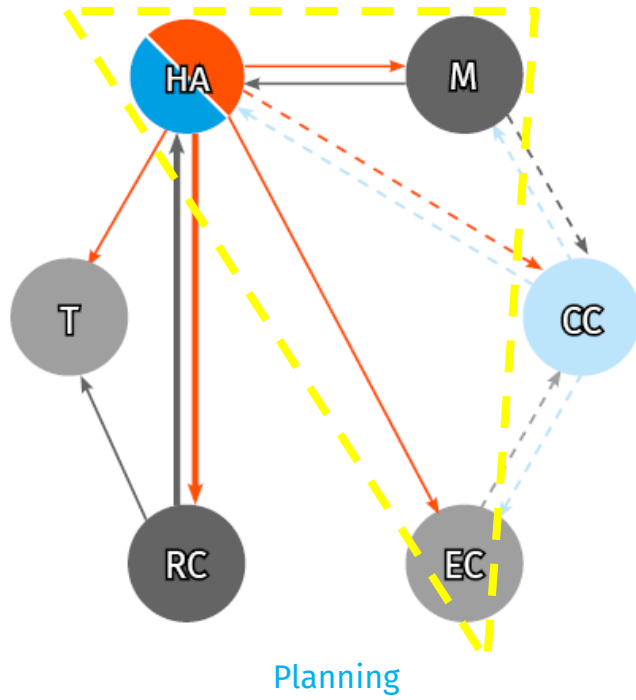
Case 2

	Project manager (HA)	Communication advisor (HA)	Area manager (M)	Communication advisor (M)	Social worker (CC)	Area manager (EC)	Residents committee	Tenants
Planning	R	S	C	S	C	C		C
Feasibility	R	S	C	S	C	C		C
Design	R	S	C	S	C	C		C
Execution	S	S	C	C	S	R		C
Operating	S	S	C	C		R		C



Results

Case 1 - organization

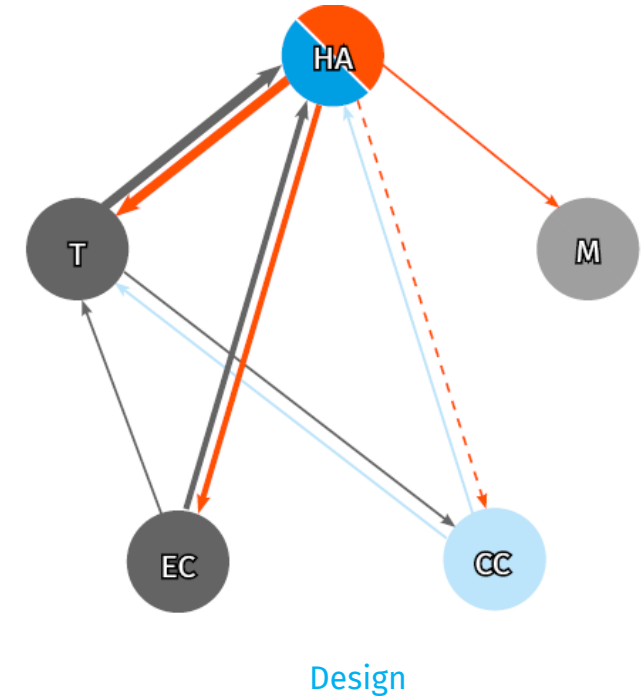
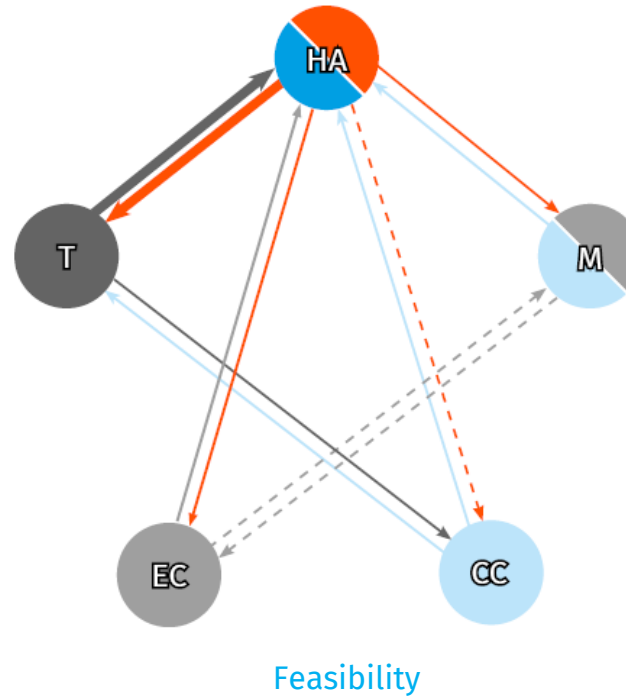
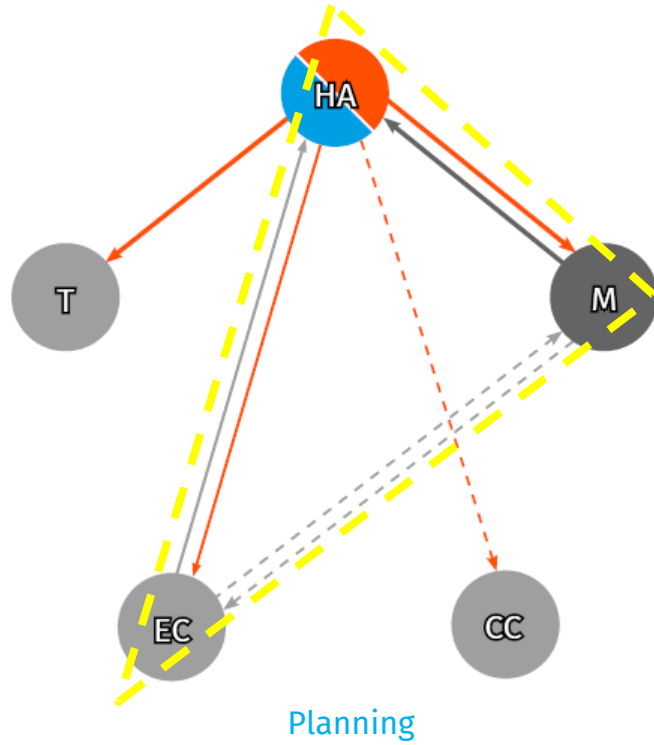


- | | | | |
|--|------------------------|-----|---------------------|
| | Some communication | HA: | Housing association |
| | Moderate communication | M: | Municipality |
| | Lots of communication | CC: | Consulting company |
| | Purpose unclear | EC: | Energy company |
| | | T: | Tenants |



Results

Case 2 - organization



- | | | | |
|--|------------------------|-----|---------------------|
| | Some communication | HA: | Housing association |
| | Moderate communication | M: | Municipality |
| | Lots of communication | CC: | Consulting company |
| | Purpose unclear | EC: | Energy company |
| | | T: | Tenants |

Sub-question 4

What communication methods do stakeholders believe would best improve adoption among tenants in heat grid projects?



Literature review

Communication

Communication strategies

Information
delivery

Information
adequacy

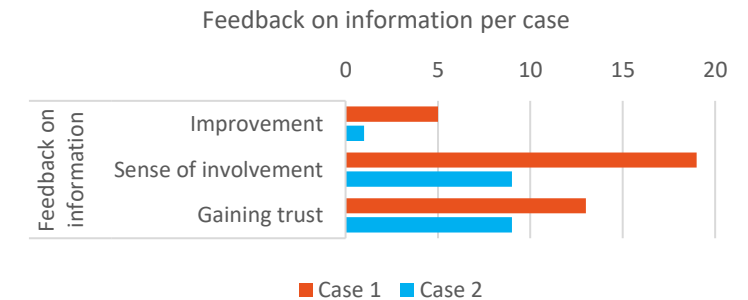
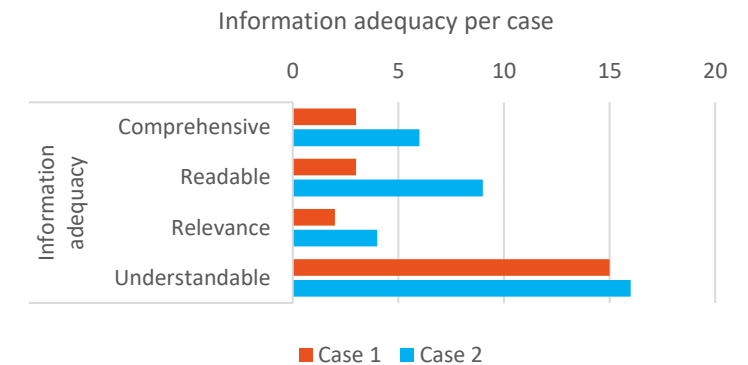
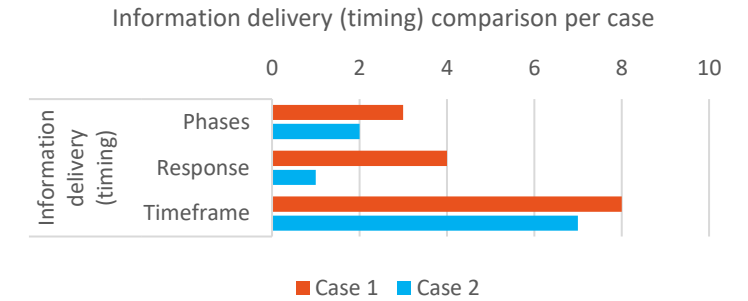
Information
feedback



Results

Case 1 & Case 2 - Communication

- **Case 1: Focus on general meetings**
- **Case 2: Quite diverse, focus on door-to-door communication**
- **Adequacy, more often in case 2**
- **Feedback, more often in case 1**

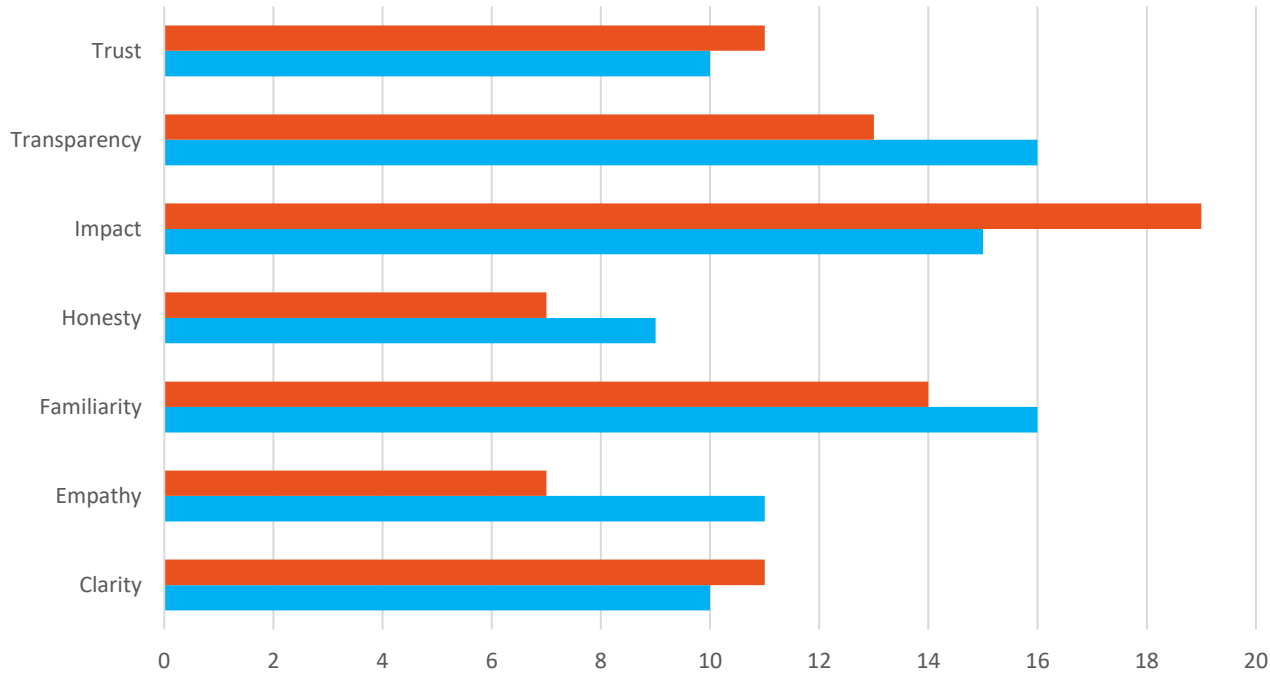




Results

Case 1 & Case 2 - Narrative

Thematic analyses regarding the narrative per case



- Thematic analysis
- Comparable in both cases
- Impact & familiarity
- Empathy



Sub-question 5

What communication approaches can be used to overcome the barriers regarding the adoption of heat grids?

Results

Communication approaches

Social
barriers

Organizational

Create trust, clear objectives, no overload

Communication

Personal attention, trusted messengers, benefits

Behavioral
barriers

Organizational

Align communication, clear narrative

Communication

Use personalized communication, be transparent

Economical
barriers

Organizational

Know who is responsible

Communication

Provide examples, clarity on energy provider

Conclusions

How can actively involved stakeholders enhance communication to improve the adoption of heat grids among housing association tenants?

Conclusions **sub-questions**

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SQ5

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Conclusions **main research question**

Stakeholder alignment

- Collaboration is key
- Keep the goals aligned
- Keep unity throughout the project

Trust

Contextualized communication

- Identify contextual barriers
- Understand the tenants
- Craft clear narratives

Adoption

Two-way communication

- Feedback for refinement
- Resident committees foster trust
- Highlight the additional benefits

Engagement

Impact

Real estate management

- Tenant engagement
- Strategy refinement
- Implementation of heat grids



Thank you

Any questions?