APPENDIX

APPENDIX A: INTERVIEW TEMPLATES

A.1 INTERVIEW QUESTIONS FOR LLS & FLS

Introduction and role

What is your position within TGV/ELZO?
What is your role within the control flow innovation project?
What kind of tasks do you take on?

Project progression

Could you describe how the control flow project developed within TGV and how the new project came about?
Why was the new project initiated? What is its objective?
For you, is the project successful if this goal is achieved, or is something else required?
What are the differences between this project and the previous project?
When did this project start, and has it been completed?
When did the previous project start, and was it completed?

Stakeholders

Since the previous project, have many new stakeholders become involved in the project?
How were they approached?
Who made the decision to approach them?
Who made the decision to ultimately involve them?
Are all the parties you wanted to involve in the project now represented?
Were there parties that you still miss or would like to involve in the project or gain insights from?
Are there parties you would involve at a later testing stage, but are not yet involved? Why?
Were any stakeholders deliberately not involved in the project? Why?
In the meeting I attended, a number of stakeholders were directly involved in the project. Are there any other stakeholders indirectly involved in the project (for example, subcontractors via Heijmans)?
Which stakeholders were involved at the start of the experiment?
Directly and indirectly → were any contacts established that proved helpful?
Which stakeholders do you think were crucial to the project? Why?
What made these stakeholders relevant?
What resources or knowledge did they bring?
What influence did they have on progress?
What role did they play in scaling up?

Stakeholder engagement

I attended a meeting recently. Is this also the standard mode of communication within the project?
Why was this form of engagement chosen?
Are there other forms of interaction used in this project? Why? (workshops, meetings, demonstrations, informal conversations, co-creation sessions)
Are all stakeholders involved in the project in the same way?
How did this approach differ across stakeholder groups?
How frequently did contact take place?
Follow-up questions (per stakeholder):
What worked well?
What worked less well?

Were there stakeholders who were insufficiently involved?
Compared to the previous project, many new stakeholders are involved; why? Is this common? Why / why not?
Are there other projects where different methods or ways of collaborating are used?

Residents

I heard that the control flow is being tested in Dreamhûs. I was wondering:
Are the residents already involved in the project at this stage?
How will they be involved during this project?
Why? Were there any risks or challenges that factored into this decision?
In an ideal situation, would you involve residents in a different way?

Power and decision-making

How are major decisions made within the project? For example, regarding research design or changes to the project?
Who do you think holds the ultimate decision-making power over these choices?
Were there stakeholders who were not involved in the project, but nevertheless influenced the choices?
At what point did that become clear?
Are there also stakeholders affected by the outcomes of this project who had no influence over decision-making?
At what point did that become clear?
Were there specific stakeholders with more influence than others?
How were conflicting interests managed? (including those of stakeholders not directly involved in the project: users, installers, municipalities)
Were any decisions made that you disagreed with?
Do you think there were moments when certain stakeholders were insufficiently heard?
How do you as TGV manage your position and influence?
Do you actively try to create space for less powerful stakeholders?
When do you feel a project is progressing fairly?

Scaling up

In your view, what contributes to the successful growth of the Control Flow?
What would this successful growth entail? (More users, other organisations becoming involved?)
What do you think could hinder this successful growth?
Do you think there is a connection between involving different stakeholders and the scaling of innovations?
Which stakeholders are decisive in this?
Which stakeholders should be involved earlier to promote scaling up?
Are there also stakeholders who should only be involved at a later stage?
Which forms of collaboration contributed to scaling up?

Responsibilities of TGV

How do you view TGV's role in engaging stakeholders in projects?
I hear a lot about the 'hop, step and jump' approach and that you operate between the lab and the pilot location.
What does this mean for you? What is TGV's role within the 'hop, step and jump'?
What falls under TGV's responsibilities within that step?
Does your responsibility end after the initial testing phase?
What is the ultimate objective of TGV?
Do you think there are activities that could be carried out during the 'hop' phase to facilitate later scaling up?
Do you think you are already doing this?

To what extent are the stages of the hop, step and jump approach compartmentalised?
What do you think TGV does well regarding fairness and scaling up innovations?
What do you think TGV could do better regarding fairness and scaling up innovations?

Reflection
In an ideal situation, are there things you would do differently in the setup of this project?
Why was this not achieved?
Are there stakeholders you would involve differently or earlier to increase the likelihood of scaling up?
Why was this not achieved?
Are there forms of collaboration you would adapt?
Why was this not achieved?
In your view, what does ideal stakeholder collaboration look like for an innovation like (Control Flow / ... / ...)?
If you wanted to adjust this, how would you implement these changes in TGV's working methods (over the long term)?
Is there anything else you would like to add, or that I forgot to ask?

A.2 INTERVIEW QUESTIONS FOR ENTREPRENEURS

Introduction
What was your role within the company?
How did the idea for the innovation originate?
Could you describe how the project developed?
What was your long-term vision for this innovation?

Living Lab experience
How did you end up at TGV?
What did you hope to achieve there?
What was your definition of success for the product?
To what extent were those goals achieved?
What was your objective in testing the product in Friesland?
How was your relationship with TGV, and how would you describe the dynamics?
How did you collaborate during the project?
Did any major changes occur during the project as a result of collaborating with TGV?
Are you satisfied with the collaboration with TGV/ELZO?
What do you think they are already doing well, and what could they improve?

Stakeholders
Which stakeholders were involved before you came into contact with TGV?
At what point in the process were they involved?
Which stakeholders did you get in contact with during the project with TGV?
Were you introduced to them by TGV?
Which stakeholders were the most valuable to engage with?
Which stakeholders were missing?

Stakeholder engagement
How did collaboration go with: TGV, WoonFriesland, CEW, residents, public authorities?
Per stakeholder: How often was there contact?, What type of contact was it?, What did this yield?, Could the collaboration have been improved?

Power
How were decisions made during the project?
Did you design the research yourself, or did you receive assistance?
How was the research set up in Friesland?
Who came up with the idea to involve a researcher?
Did you find this a pleasant way of working?
Choices regarding the product itself.
Did you feel you had influence over major decisions?
Were there parties that had relatively high influence / final decision-making power?
Were there situations where interests conflicted, and how was this managed?
Were there moments when certain stakeholders were insufficiently heard?
How did you manage your position/influence over the project?
Did you try to make space for less powerful stakeholders? (e.g. listening to residents' opinions..)

Scaling up
What helped the scaling up process?
What hindered scaling up?
Which stakeholders were essential? Or are essential, but were not yet involved?
Which stakeholders should be involved earlier or more intensively to increase the likelihood of scaling up?
Which forms of collaboration contributed to scaling up?

Future
What is needed to scale up the innovation further?
Looking back on the project, would you have done things differently?

A.3 INTERVIEW QUESTIONS FOR RESIDENTS

Introduction
How did you become involved with TGV?
Why did you decide to live at TGV? When?
How do you like living at TGV now?
The Control Flow was tested twice at TGV. Were you already living there when it was tested for the first time?
What did you know about the project beforehand?
To what extent do you know how the product works?
How much information is shared with you?
Are the research results also shared with you?
What do you think about this?

Engagement
At what points have you been involved in projects? (Is that also the case in other projects?)
How were you approached?
I heard that in exchange for participating in experiments, you pay reduced rent. Is that correct?
Do you find that fair?
Are you rewarded or incentivised for participating in any other way?
Do you pay for your own water → does it make a difference to you how you use the product?
How did the contact go?
With whom?
What was asked of you?
What do you consider a pleasant way of collaborating?
Is that also done frequently?
Which forms of collaboration would you like to see more often?
Which forms of collaboration do you think are most effective?
Are you asked about your opinion on the way of collaborating / communicating / participating in projects?

Power
Did you feel that you were / are being listened to?
Do you feel that adjustments are made based on what you say or think?
For the Control Flow, testing with residents focuses mainly on comfort; are there other aspects asked about within this project?
In other projects, are there other aspects besides comfort where your opinion is asked?
Do you occasionally have ideas about how products could work better?
Is there space to share these ideas? Do you think these ideas would be taken seriously?
How much influence did you have on the project?
Would you like to be more closely involved in projects occasionally?
Including the Control Flow?
Are there projects where you felt very involved?
Why?
Is that also the case for the Control Flow?
Can you decline to participate in a project? Do you feel you are allowed to do so?
Are you allowed to decline completing a survey?
Have you ever done so / in hindsight wished you had done so?

Scaling up
Do you feel responsible for achieving good results in Dreamhûs projects?
In what way?
Also for the Control Flow?
Do you find that burdensome?
Do you feel you have influence over the product?
Do you think you play a major role in how successful an innovation becomes?
For many projects, you naturally represent the 'user' perspective. Do you feel you are involved in an appropriate way to fulfill this role?
Is it fair enough?

Ideal situation
How would you ideally like to be involved?
How often?
What would be a pleasant form of collaboration for you? (interview, co-creation, etc.)
Why do you think that is not currently happening?
What would be required to make this happen?
When is a project successful for you?
Are there aspects of this project that you find unpleasant?

A.4 INTERVIEW QUESTIONS FOR WOONFRIESLAND

Introduction
What is your role within Dreamhûs?
What was/is your role within the Control Flow project?
What tasks did you take on?

Project progression
Could you describe how the project developed? First at TGV and then in Leeuwarden.
How long was the product ultimately tested in Dreamhûs?
What was tested in Dreamhûs?
How did CEW become involved in the project in Friesland?
Do you always write a report on the outcomes?
Do you always write a report based on a pilot in Friesland?
Was TGV still involved in the project in Friesland?
Were the other parties of Dreamhûs involved in the project (at

Dreamhûs & in Leeuwarden)? (Bouwgroep Dijkstra and Belangen Friesland)
Was your role different in these two projects?
What was the objective of the testing phase at TGV? What did you test?
What was the objective of the test in Leeuwarden?
When was the project successful for you? Was it successful in your view?
When do you decide whether an innovation is tested in Friesland?
Who is involved in that decision?
Are you also involved in the new Control Flow project, given that it is being tested in Dreamhûs?

Engagement

At what points were you involved in the project (both at TGV and afterwards)?
How did contact go?
With whom?
What was asked of you?
Do you assist in establishing contact between entrepreneurs and other parties?
How does that contact proceed?

Power

How much influence do you have on decisions made within the project? For example, regarding research design or project modifications? (from WoonFriesland or the Dreamhûs consortium)
Did you get the opportunity to make suggestions?
Were your suggestions taken seriously / Were changes made based on your input?
Were there parties that held ultimate decision-making power in this project?
This can also include parties that were not directly involved.
Were there situations where interests conflicted, and how was this managed?
Were there moments when certain stakeholders were insufficiently heard?
How did you handle your position/influence over the project?
Did you try to create space for less powerful stakeholders?
When do you think a project progresses fairly?

Scaling up

What do you think your role is in scaling up / growing innovations?
What helps drive product scaling up according to you? How was that in this project?
Were there also factors that hindered the scaling up of the product? What were they?
Which stakeholders needed to be involved to grow the Control Flow?

Collaboration with TGV

How does collaboration with TGV and Dreamhûs proceed?
How would you describe the dynamics?
Are you satisfied with the collaboration with TGV/ELZO?
What do you think they are already doing well, and what could they improve?
How would you ideally like to be involved in projects? (who, what, where, when?)
What would your ideal collaboration with TGV and entrepreneurs look like?

Reflection
In hindsight, would you have done anything differently in this project?

Questions about residents
How were they approached?
Who approached them?
Did subsequent contact also go through them?
In Leeuwarden, how was it decided where the product was placed?
Did residents have a say in this?
What was the incentive or reason for residents to cooperate?
At what points were residents involved?
Dreamhûs
Leeuwarden
Did residents know what the product did? How was that communicated?
What was requested of the residents?
Only a survey?
Also other modes of communication?
What did they think of the collaboration? Pleasant/tiring?
Did they feel they had influence over the product?
Are residents also aware of the research outcomes?
Do you think residents felt they were helping advance the product?
Do you think residents are important when scaling up innovations?
Do you feel it matters how they are involved?
How do you think residents would ideally like to be involved?
Workshop, survey, talking about the product, etc.
Do you think they would want a say in product choices?
Were residents rewarded for participating in the study? Why?

A.5 INTERVIEW QUESTIONS MUNICIPALITY OF AMSTERDAM

Introduction and role
What is your position within the Municipality of Amsterdam?
What was your role within the sustainable heat project?
What kind of tasks do you take on?
Were you involved in the building team?
Which municipal departments were involved in the building team?
Which municipal departments were involved in the project, but not in the building team?
Annoesjka scheduled an interview for me with you and one with Katelien. She wanted me to speak with you first. Do you know why that is?

Project progression
Could you describe how the project with the building team phase came into being?
The report stated that a building team phase was chosen in consultation with market parties. Do you remember who these market parties were? Were they also involved in the project later on?
It stated that various forms of collaboration were explored. What other forms were discussed?
Due to the building team setup, there was naturally close collaboration between the municipality and Eteck itself. Were interaction models also discussed in which other parties would be more closely involved in the project?
Why was this option not chosen?
Do you think that would have been more effective?
Why / why not?
The tender was of course conducted in an effort to move Amsterdam further towards becoming natural gas-free. How did you come

up with the idea of using heat from data centres for a district heating network?
I can imagine this was not the only project contributing to the goal of becoming natural gas-free. Who originates these ideas?
Are these ideas also discussed with other stakeholders and executing parties before a tender is written?
To what extent is the feasibility of a project investigated?
Who carries this out?
If there were several ideas for becoming natural gas-free, how was it decided which ideas received a tender and a substantial budget allocation?
In the report, the municipality's responsibilities within the project were described as: leading the building team; communicating decisions necessary for project progress; informing the building team about agreements made with third parties relevant to the project; and drafting a heat plan in consultation with the contractor to present to the municipal council for approval.
In addition to these responsibilities, were there other tasks that the municipality ultimately took on in the project?

Stakeholders
Were all parties you wished to involve in the project actually represented?
Were there parties you still missed or would have liked to involve in the project or gain insights from?
Potential residents were not involved in the project. I was told that they do not mind how heat is supplied. In your view, is that accurate, or might something change that residents would have had an opinion on?
Would you inform potential residents about what would change for them / what would happen?
Ideally, how would you have involved residents?
Are there parties you would involve at a later testing stage, but are not yet involved? Why?
Were any stakeholders deliberately not involved in the project? Why?
As I mentioned earlier, 'leading the building team' was described as one of your responsibilities. What exactly did this task entail?
Was the agenda of meetings decided by you, or also by Eteck?
The report outlines several progress meetings and building team meetings. I was wondering to what extent co-creation occurred?
Was it mainly Eteck presenting what they had done, or was a problem presented and solutions brainstormed together?
Was there co-creation, or was it primarily Eteck?
Were there different modes of interaction throughout the project?
Workshops, meetings, presentations, informal conversations?
Do you feel that certain ways of working functioned particularly well for this project?
What worked less well / what would you have preferred to see done differently?
Is this also a standard way of working for you, or do you employ different methods for other projects?
In the report, it was indicated that Eteck would have liked to see a greater contribution from the municipality.
What exactly did they expect from you? (p. 66)
Why was this not done?
The Collective Heat Act was approaching; how much did you already know about this?
Do you think the project would have had a higher chance of success if you had provided a larger contribution?
Within the report, information asymmetry within the municipality is mentioned, such as the Letter of Intent with Vattenfall regarding (indicative) supply tariffs. Do you think there were ways to prevent this? How?

Power and decision-making

Were there parties in this project that had more power than others (over the outcomes of the project)?
How was this evident?
Do you think there were stakeholders within the project with less power?
How were conflicting interests managed? (e.g. ownership demarcation point at the data centres (p. 44) or Vattenfall's tariffs)
Were decisions made within the project that you disagreed with?
Which decisions?
How were these decisions made?
Were there other moments (throughout the entire project) when certain stakeholders were insufficiently heard?
Do you feel the project progressed fairly?
Do you think there were stakeholders who worked against the project?

Role of ELZO

I spoke with Annoesjka earlier, and she briefly explained that this was originally a Municipality of Amsterdam project and was later connected to ELZO. Is this correct, and can you tell me more about this?
I joined this project because it was connected to Energie Lab ZuidOost. I was wondering to what extent this project differed from other projects due to their involvement.
What exactly was ELZO's role within this project?
There were naturally researchers involved who wrote a report on the building team phase, and I found a number of student projects on the heating network.
To what extent were these insights used? Did these studies influence the process?

Reflection

In an ideal situation, are there things you would do differently in the setup of this project?
Why was this not achieved?
Are there stakeholders you would involve differently or earlier to increase the likelihood of scaling up?
Why was this not achieved?
Are there forms of collaboration you would adapt?
Why was this not achieved?
In your view, what does ideal stakeholder collaboration look like for a similar process? Was this comparable to a building team phase?
If you wanted to adjust this, how would you implement these changes in the municipality's working methods?
In hindsight, would you have changed anything in the tender or project setup that would have increased the chances of success?
Is there anything else you would like to add, or that I forgot to ask?

APPENDIX B: CODEBOOK

CODE NAME	CODE DESCRIPTION	EXAMPLE
Collaborative Challenges	Operational difficulties, communication gaps, or overlapping projects that obstruct organisational collaboration.	TGV (I2): "If there isn't that common ground or shared objective, it does become more difficult to pull everyone away from their work every time and say, `You really need to be here, because we're going to do some great things with OK, I'm not quite sure how yet, but it's going to be really great.'"
Communication within projects	Objective of communication activities, including informing partners, gathering user experience, or providing post-evaluation research updates.	Resident Dreamhûs (I7): "It feels a bit like ghosting. And I think if you do something longer like that, maybe just a message once a month... that would already be enough so you know it's still running."
Decision-Making Process	The governance mechanisms (e.g., democratic consensus, top-down instruction, consortium meetings) through which decisions are negotiated.	TGV (I3): "So far it is actually all very dynamic and democratic... If real choices are made, it is very much in consultation."
Experimental Design	Physical, methodological, and procedural arrangements established to conduct trials and data collection within the testbed.	TGV (I2): "The standard structure at TGV moves from intake and preparation to Live@TGV and follow-up."
Formal Decision-Making Authority	Formal power of actors to make binding project decisions or exercise veto rights.	WoonFriesland (I4): "So we always talk to parties before they come to test at Dreamhûs. And then you get a kind of green light or red light from us on whether that is suitable there or not."
Function of LL and FL	Systemic role played by the physical testing environment or intermediary platform (e.g., testbed infrastructure, network brokering, neutral facilitation).	ELZO (I15): "The entire research would not have existed if Energielab Zuidoost hadn't been there... Because trust in the ecosystem was built beforehand, researchers from TU Delft and AMS were allowed to sit in on all those building team meetings as a fly on the wall."
Ideal Governance Scenario	Stakeholders' normative perspectives on how project governance, collaboration, and stakeholder inclusion should ideally be structured.	Heijmans (I5): "We strongly believe it can be done together... So our stance is that you really have to look together at how to arrive at better solutions."
Inclusion Timing & Intensity	Lifecycle phase (design, implementation, evaluation) and intensity level (information, consultation, co-creation) at which stakeholders are engaged.	Resident Dreamhûs (I7): "We received a message in advance and I got a short briefing like `hey, this is the company coming with an innovation.' Then it is explained a bit why and what it is supposed to do."
Informal Influence	Ability of actors to shape project directions through trust, networks, or advice without possessing formal contractual authority.	GeoDesign Barriers (I10): "TGV and TU Delft advise on how we can tackle certain things, but they never have a determining role. The decisions about product adaptations and commercial choices are made entirely by us."
Innovation Characteristics	Technical specifications and operational parameters of the technology being tested.	Cenergist (I1): "The idea for the product came from an employee of a water company in Drenthe... to comfortably save water... by removing pressure fluctuations."

Table B.1: Codebook for deductive thematic analysis

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CODE NAME	CODE DESCRIPTION	EXAMPLE
Motivation for Experimentation	Drivers for testing an innovation in a PHELE.	Cenergist (I1): "We wanted to have a Dutch water university conduct research with us on the performance and acceptance of the Control Flow on the Dutch market."
Motivation for Project Setup	Rationale for choosing a specific governance structure or contractual model (e.g., bouwteam).	Municipality of Amsterdam G&O (I13): "Because energy companies and area developers don't know each other's worlds... So to share those risks and jointly build the business case, a construction team phase was chosen."
Participatory Methods	Specific tools or Key Enabling Methodologies (e.g., surveys, door-to-door visits, construction teams, demonstration days) used to engage stakeholders.	Water Board Limburg (I8): "After the 2021 high water in Limburg, we conducted a market consultation and tender for mobile barriers... GeoDesign Barriers adapted their product to our requirements and tested it at Flood Proof Holland."
Power Balancing	Mechanisms or strategies used to redistribute decision-making weight, mitigate power asymmetries, or protect weaker stakeholders.	TGV (I2): "Residents have a rather vulnerable position... We wanted to prevent entrepreneurs from walking into the living room unannounced. So if an entrepreneur wants to visit, they must request it at least a week in advance."
Process Exceptions	Unplanned events, external shocks, or project deviations that alter standard project trajectories.	TGV (I3): "Due to Cenergist's bankruptcy the project stopped, but TGV saw a new subsidy and later restarted the Control Flow project under a new consortium."
Scaling Barriers	Institutional, financial, legal, or technical lock-ins that hinder the transition of innovations from protected pilot sites to the broader regime.	Municipality of Amsterdam CWA (I14): "You are not allowed to sit down with heat suppliers before the tender is formed, because they would have prior knowledge, and that is not permitted under the Public Procurement Act."
Scaling Pathways	Mechanisms through which an innovation expands, including numerical replication (spreading), policy integration (broadening), or institutional learning (deepening).	WoonFriesland (I4): "The test in Leeuwarden showed that consumption decreased by 10.3%, and based on those results we rolled out 300 to 400 homes on Ameland."
Stakeholder Identification	Criteria and procedures used by project initiators to select, approach, and recruit project partners or participants.	Heijmans (I5): "Once the project started and the Control Flow needed to be installed, it became clear that it was useful to include an installer's perspective, so we contacted Breman."
Stakeholder Interests and success	Strategic goals or policy objectives that motivate specific actors to participate in a project.	Municipality of Katwijk (I6): "If this TKI research shows that the Control Flow achieves that 20% reduction... That is simply a policy objective for us."
Stakeholder Power	Types and sources of power (formal authority, critical resource control, discursive legitimacy) possessed by actors in the project network.	WoonFriesland (I4): "Housing corporations control access to the social housing stock where innovations need to be tested."
Stakeholder Relevance & Identification	Identification of Quadruple Helix stakeholders (government, industry, academia, community) required for execution or scaling.	Municipality of Katwijk (I6): "I brought BPD forward because for the first area it's like `hey, join in, because it's important that we save drinking water.'"
Stakeholder Role	Specific functions, duties, and execution responsibilities assigned to or performed by an actor.	Cenergist (I1): "My role was the rollout of the product, the Control Flow... and being responsible for the research setup and data analysis together with CEW."

Table B.1: Codebook for deductive thematic analysis

APPENDIX C: ACTOR AND NETWORK ANALYSIS

C.1 ACTOR AND NETWORK ANALYSIS FOR THE CONTROL FLOW

ACTOR NAME	ACTOR DESCRIPTION	STRATEGIC OBJECTIVE	RESOURCES	HOW WILL PROJECT SUCCESS INFLUENCE STAKEHOLDER?	SOURCES
Cenergist	Innovation company/ product owner during projects	Demonstrate CF's water-saving and comfort performance in the Netherlands and create a credible basis for wider market adoption.	Technical: controls product knowledge, installation options, and experimental design and decisions; Social: commercial/company network; Institutional: formal authority to make decisions about the product and research.	Successful testing provides evidence for market uptake; failure or unresolved comfort issues weaken commercial prospects.	I1, I2, I4
The Green Village	Field-lab/operator and, in Dreamhûs, facilitator of experimentation	Move innovations from idea/ testing toward implementation and connect innovators with pilot partners.	Institutional: controls site access to Dreamhûs and field-lab procedures; Social: extensive innovation/ stakeholder network; Technical: testing setup knowledge and knowledge of experimentation and test set-up; Financial: contributes to/helps organise testing infrastructure.	Successful projects strengthen TGV's role as a route from experimentation to implementation and as a credible field-lab intermediary.	I2, I3, I7
\&Flux	Stakeholder facilitation and network connection in the new project	Realise scalable solutions to save drinking water. Share those findings with network.	Social: network access and stakeholder connections; Institutional: influence over consortium/ network process.	Success strengthens its value as a connector and may enable further projects.	I3, I6
Woon-Friesland	Social housing corporation; Dreamhûs partner and pilot host in Leeuwarden	Test innovations safely before wider housing deployment and assess suitability for its housing stock.	Financial: funds Dreamhûs, controls procurement decisions, and is a potential buyer of the product; Institutional: controls access to Dreamhûs, social housing stock, testing location and implementation decisions afterwards; Social: relationship with tenants; Technical: operational knowledge of housing.	Successful results support evidence-based implementation and reduce uncertainty; unsuitable results prevent costly or inappropriate rollout.	I4, I2, I3, I7
Bouwgroep Dijkstra Draisma	Dreamhûs founding partner / construction-sector partner	Assess whether tested innovations can be transferred into housing construction.	Financial: co-funds Dreamhûs infrastructure; Institutional: controls access to Dreamhûs and implementation decisions afterwards; Technical: construction knowledge and building construction expertise.	Success can create a viable construction application and support uptake in housing projects.	I4

Table C.1: Actor and network analysis for the Control Flow

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ACTOR NAME	ACTOR DESCRIPTION	STRATEGIC OBJECTIVE	RESOURCES	HOW WILL PROJECT SUCCESS INFLUENCE STAKEHOLDER?	SOURCES
Huurdersbelang Fryslân	Tenant-interest organisation and Dreamhûs founding partner	Represent tenant interests when deciding whether innovations are suitable for social housing.	Financial: funds Dreamhûs; Institutional: tenant representation in governance and controls access to Dreamhûs and implementation decisions afterwards; Social: representation of the tenants and social legitimacy among residents.	Success can support acceptable, tenant-relevant innovation; poor comfort/acceptance can block wider uptake.	I2, I4
Dunea	Drinking-water company supplying households in South Holland	Provide drinking-water-system knowledge and assess relevance for the regional water system.	Institutional: position in drinking-water provision; Technical: water-system knowledge; Social: sector network.	Success could support water-saving strategies, but direct implementation depends on its institutional role.	I3
BPD	Property developer approached for possible future application	Explore application of CF in new construction and future scaling.	Technical: construction/development knowledge; Institutional: influence over development choices and control over pilot location; Social: development network.	Positive results could enable incorporation into new developments.	I3, I6
Heijmans	Construction company; potential implementation partner in new construction	Test practical applicability and identify whether CF can fit a standard building design.	Technical: construction and installation knowledge; Institutional: ability to embed technology in projects; Social: access to development and installer network.	Success can produce a standardisable solution for new-build projects; poor results reduce adoption potential.	I3, I5
KDWS	Drinking-water-safety consultancy representing CF after Cenergist's bankruptcy	Maintain the innovation and provide product-related expertise within the new research consortium.	Technical: product/advisory expertise; Social: sector network; Institutional: credibility in drinking-water safety.	Success could re-establish a route for CF after Cenergist's bankruptcy and enable later pilots.	I3
Breman	Installer approached to contribute practical installation perspective	Ensure the device can realistically be installed and maintained in buildings.	Technical: installation knowledge and practical constraints; Social: contractor network.	Success could make the solution easier to install and more scalable in practice.	I3
Subsidy provider	Funding body enabling the 2026 consortium	Fund research addressing water conservation.	Financial -- provides funding required to initiate/continue the consortium; Institutional -- funding criteria shape project design.	Success demonstrates value of the funded intervention/research and may support future funding.	I3
TU Delft -- researchers	Scientific research partners	Develop/implement robust scientific testing and analyse results.	Technical: scientific expertise and methodological authority; Institutional: university credibility.	Success produces scientifically credible evidence and models supporting later scaling.	I3, I2

Table C.1: Actor and network analysis for the Control Flow

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ACTOR NAME	ACTOR DESCRIPTION	STRATEGIC OBJECTIVE	RESOURCES	HOW WILL PROJECT SUCCESS INFLUENCE STAKEHOLDER?	SOURCES
TU Delft -- funders	Funding stakeholders linked to research/ field-lab activities	Provide resources for research/ testing infrastructure.	Financial -- funding; Institutional -- ability to condition funding.	Success supports evidence of value and continued investment.	I2, I3
Rotterdam University of Applied Sciences	Research partner in new consortium	Contribute scientific expertise to the testing procedure and evidence base.	Technical: scientific expertise and methodological authority; Institutional: research legitimacy and educational/research legitimacy.	Success creates evidence usable for implementation and scaling.	I3
CEW	Water-technology research partner in Leeuwarden project	Conduct objective research into water savings and user comfort.	Technical: water-technology research expertise; Institutional: research credibility.	Success provides objective evidence supporting adoption decisions.	I1, I4
Province	Public authority consulted in new project	Provide policy/public-sector perspective and potentially support scaling.	Institutional: public authority and policy influence; Financial: possible funding programmes; Technical: knowledge on policies; Social: public-sector network.	Success can create evidence for policy or regional uptake.	I3
Water authority	Public water-management actor consulted at different phases	Provide water-system/public-interest knowledge relevant to water conservation.	Institutional: statutory/public role; Technical: water-system expertise.	Success may inform regional water policy or adoption.	I3
Municipality of Katwijk	Potential public adopter; policy and network actor	Assess whether CF can be applied in existing housing and connect implementation actors.	Institutional: policy-making and public procurement/implementation influence; Social: local stakeholder network; Technical: contextual knowledge.	Success could enable a future municipal pilot and policy support.	I3, I6
Resident Katwijk	Potential end user / future resident group	Experience the technology in everyday housing and inform acceptability if/when piloted.	Social: lived experience/user perspective; Institutional: limited direct decision power unless formally represented.	Success could support acceptance; poor perceived comfort could challenge implementation.	I6
Resident Dreamhûs	Test resident/end user	Experience CF and report comfort/problems during testing.	Technical: user experience feedback; Social: experiential/user knowledge; limited institutional power.	Success demonstrates acceptable user experience; discomfort can identify technical limits.	I7, I2, I3
Resident Leeuwarden	Pilot user/end user	Provide real-world comfort feedback and participate voluntarily in the pilot.	Social: user experience; limited institutional power.	Positive comfort evidence supports implementation; negative feedback can reveal constraints.	I4

Table C.1: Actor and network analysis for the Control Flow

C.2 ACTOR AND NETWORK ANALYSIS FOR MOBILE FLOOD BARRIERS

ACTOR NAME	ACTOR DESCRIPTION	STRATEGIC OBJECTIVE	RESOURCES	HOW WILL PROJECT SUCCESS INFLUENCE STAKEHOLDER?	SOURCES
GeoDesign Barriers	Product manufacturer/owner in the Netherlands; develops/adapts barriers, tests them, demonstrates them and supplies buyers.	Protect/reduce flood risk and/or enable wider use of mobile barriers.	Technical: owns product expertise and decides product adaptations; Institutional: has authority to make decisions on alterations and research objectives.	Barrier is accepted by buyers, performs reliably, meets requirements and can be replicated in other contexts.	I10
Provinces	Potential public purchasers/coordinators and policy actors.	Protect/reduce flood risk and/or enable wider use of mobile barriers.	Institutional + financial: regional policy, coordination and potential funding.	Success could reduce flood risk for assets/users and/or create a stronger market and governance pathway for mobile barriers.	TGV
Water Boards	Flood-risk managers and potential buyers; define requirements and operational needs.	Protect/reduce flood risk and/or enable wider use of mobile barriers.	Institutional: statutory flood-management mandate and public responsibilities; Financial: potential procurement budgets; Social: can influence opinions of other waterboards.	Effective, deployable flood protection with clear responsibilities and procurement pathways.	I8
Ministry of Infrastructure and Water Management	National flood/water policy actor and potential buyer/standard-setting actor.	Protect/reduce flood risk and/or enable wider use of mobile barriers.	Institutional + financial: national policy and public resources.	Success could reduce flood risk for assets/users and/or create a stronger market and governance pathway for mobile barriers.	TGV
Potential buyers: airports, hospitals, companies	Potential end users/buyers needing protection of critical sites or assets.	Protect/reduce flood risk and/or enable wider use of mobile barriers.	Financial: control budgets.	Success could reduce flood risk for assets/users and/or create a stronger market and governance pathway for mobile barriers.	I10
Insurers	Potential actor with an interest in risk reduction and claims prevention.	Protect/reduce flood risk and/or enable wider use of mobile barriers.	Financial: influence through insurance claims prevention; Institutional: risk assessment mechanisms.	Success could reduce flood risk for assets/users and/or create a stronger market and governance pathway for mobile barriers.	TGV

Table C.2: Actor and network analysis for the Mobile Flood Barriers

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ACTOR NAME	ACTOR DESCRIPTION	STRATEGIC OBJECTIVE	RESOURCES	HOW WILL PROJECT SUCCESS INFLUENCE STAKEHOLDER?	SOURCES
STOWA	Knowledge organisation for water boards; organises knowledge exchange, research, demonstrations and reports.	Protect/reduce flood risk and/or enable wider use of mobile barriers.	Technical: research and knowledge expertise; Social: sector network; Institutional: convening role among water boards.	Knowledge sharing and awareness lead to actors taking action on mobile flood protection.	I9,
TU Delft	Research partner/knowledge actor; conducts research and supports questions around flood protection.	Protect/reduce flood risk and/or enable wider use of mobile barriers.	Technical: scientific flood-risk knowledge; Institutional: research legitimacy and academic credibility.	Success could reduce flood risk for assets/users and/or create a stronger market and governance pathway for mobile barriers.	I9, TGV
The Green Village	Manages Flood Proof Holland, organises demonstrations and helps establish test locations.	Protect/reduce flood risk and/or enable wider use of mobile barriers.	Institutional: controls Flood Proof Holland facility; Social: connects actors and organises access; Technical: testing infrastructure.	Demonstration/testing infrastructure successfully connects technology with relevant users and buyers.	TGV
Water Board Limburg	Buyer/user; conducted market consultation, wrote requirements, tendered and purchased barriers.	Protect/reduce flood risk and/or enable wider use of mobile barriers.	Financial: procurement budget; Institutional: statutory flood-management role and tender authority; Technical: ability to define technical requirements; Social: can influence opinions of other waterboards.	A large stock of mobile barriers is available and can be deployed rapidly; procurement requirements are met.	I8

Table C.2: Actor and network analysis for the Mobile Flood Barriers

C.3 ACTOR AND NETWORK ANALYSIS FOR THE DISTRICT HEATING NETWORK

ACTOR NAME	ACTOR DESCRIPTION	STRATEGIC OBJECTIVE	RESOURCES	HOW WILL PROJECT SUCCESS INFLUENCE STAKEHOLDER?	SOURCES
Municipality of Amsterdam	Public authority and tender initiator; provided co-funding, area management, and spatial planning (G&O, IB, CWA).	Accelerate urban energy transition, achieve climate neutrality, and utilize local datacenter waste heat.	Institutional: Official municipal authority and regulator that designed the bouwteam tender, holds final concession granting authority; Financial: Controlled the €4.5M municipal contribution/revolving loan intended to bridge initial investment and fill-up risk.	Realize an open, affordable low-temperature heat grid and build municipal governance capacity for future heat transitions.	I11, I13, I14, Correlje et al. (2025)
Energie-Lab Zuidoost (ELZO)	Intermediary living-lab platform connecting municipal departments, academia, and private actors in Amsterdam-Zuidoost.	Facilitate collaborative learning, test living-lab governance methodologies, and bridge research with urban transition policy.	Institutional: Intermediary living-lab platform embedded in municipal and university governance structures; Social: Strategic network position connecting academic research, municipal departments, and local community initiatives.	Actionable governance insights and validated living-lab methodologies applied to broader urban sustainability challenges.	I15, Correlje et al. (2025)
Eteck	Private energy company and bouwteam partner; responsible for designing grid, business case, and risk dossier.	Develop a commercially viable, bankable low-temperature heat network concession with managed operational risks.	Technical: Engineering and modeling expertise in low-temperature networks and WKO systems; authored the technical design, business case, and risk dossier; Financial: Corporate investment capital authority and the sole commercial power to withdraw from submitting a final concession offer.	Secure a long-term profitable heat concession and expand commercial market share in urban heat transitions.	I11, I13, I14, Correlje et al. (2025)
Data centre	Datacenter operator (AM7/AM9); potential source of low-temperature waste heat.	Re-use datacenter waste heat cost-neutrally to fulfill corporate sustainability goals without risking core IT operations or uptime.	Technical: Operational control over datacenters and physical heat availability/extraction parameters.	Improved sustainability profile and cost-neutral waste heat re-use without operational risk to IT assets.	I13, I14, Correlje et al. (2025)
Vattenfall	Incumbent regional energy utility; operates existing high-temperature district heating network in the area.	Protect existing customer market share, asset investments, and prior municipal delivery agreements (Afsprakenbrief).	Financial: Commercial ownership of existing district heating/cooling infrastructure and control over customer tariffs; Institutional: Holds pre-existing delivery agreements with key developments like Eleven Square.	Greening of existing grid while safeguarding customer volume, asset returns, and market position.	I13, I14, Correlje et al. (2025)

Table C.3: Actor and network analysis for the District Heating Network

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ACTOR NAME	ACTOR DESCRIPTION	STRATEGIC OBJECTIVE	RESOURCES	HOW WILL PROJECT SUCCESS INFLUENCE STAKEHOLDER?	SOURCES
Woodencity	Real estate developer for ~4,000 housing equivalents; intended major heat off-taker and potential datacenter heat supplier.	Secure affordable, reliable heating for development plots to achieve required building energy performance (EPC/BENG) ratings.	Technical: Development expertise; Financial -- Controlled a major share of initial heat demand and potential supply.	Low connection tariffs, compliance with building energy performance standards, and enhanced real estate value.	I11, I12, I13, Correlje et al. (2025)
Eleven Square	Launching customer real estate development in Amstel III seeking low-temperature heating solution.	Achieve strict building energy targets (EPC 0.2) through sustainable local heat supply.	Institutional: Launching customer real estate development bound by municipal erfpacht sustainability requirements; Financial: Pre-agreed tariff caps in municipal Afsprakenbrief restricting Eteck's connection fee revenue models.	Fulfillment of strict EPC 0.2 sustainability targets and reliable heating for new building occupants.	I13, I14, Correlje et al. (2025)
Academic Researchers (AMS / TU Delft)	Research partners embedded via ELZO; observed bouwteam meetings and conducted financial/process research.	Generate scientific knowledge, analyze governance processes, and publish academic research on urban heat transitions.	Technical: Specialized expertise; Social: Discursive legitimacy and objective process evaluation, though holding no formal contractual authority.	Published research insights, validated transition governance models, and empirical contributions to academic literature.	I11, I15, Correlje et al. (2025)
Heat Consumers / Future Residents	End-users of space heating and hot water in future housing developments; unrepresented directly during planning phase.	Affordable, reliable, and comfortable indoor heating and hot water with transparent tariffs.	Social: End-user heat demand, lived experience, and public acceptance regarding heat affordability and comfort; however, future occupants were not yet identifiable or represented during the planning phase.	Access to clean, affordable, and reliable heating without excessive monthly costs or service interruptions.	Correlje et al. (2025)

Table C.3: Actor and network analysis for the District Heating Network

APPENDIX D: TIME AND LEVEL OF INVOLVEMENT

D.1.1 TIME AND LEVEL OF INVOLVEMENT FOR PROJECT 1 OF THE CONTROL FLOW

PROJECT PHASE	ACTOR	FORM OF INVOLVEMENT	LEVEL	DEGREE OF INFLUENCE	SOURCES
Design	Cenergist	Initial contact with CEW; project was shaped around objective testing; WoonFriesland identified as housing partner; discussions about what to test.	Co-creation	High	I1, I4
Design	The Green Village (TGV)	Agreed to host the CF in Dreamhûs and discussed test conditions with the entrepreneur.	Consultation	High	I2, I3
Design	Dreamhûs	Helped define why Dreamhûs was useful and influenced the research setup.	Consultation	High	I4
Design	Resident -- Dreamhûs	Informed/briefed after the research setup was clearer; residents were selected for the test.	Information	Low	I7, I2
Implementation	Cenergist	Installed/managed the CF test, executed the experiment and monitored the technical operation.	Co-creation	High	I1, I2
Implementation	TGV	Provided Dreamhûs test infrastructure, coordinated practical arrangements and checked that the experiment ran properly.	Information	High	I2
Implementation	Dreamhûs	Provided housing/social-housing perspective and feedback on setup; supported the use of Dreamhûs.	Information	High	I4
Implementation	Resident -- Dreamhûs	Used the home during testing and reported comfort/issues when relevant. Filled out survey on comfort.	Consultation	Low	I7
Evaluation	Cenergist	Analysed/used test results to understand technical performance and comfort threshold.	Co-creation	High	I1, I2
Evaluation	TGV	Held midpoint/end evaluation conversations and considered how the entrepreneur could progress after testing.	Consultation	Medium	I2, I3
Evaluation	Dreamhûs	Reviewed results and assessed whether the innovation was suitable for further housing application.	Co-creation	High	I4
Evaluation	Resident -- Dreamhûs	Was informed of the outcomes of the project.	Information	Low	I7

Table D.1.1: Time and level of Involvement of actors in project 1 of the Control Flow

D.1.2 TIME AND LEVEL OF INVOLVEMENT FOR PROJECT 2 OF THE CONTROL FLOW

PROJECT PHASE	ACTOR	FORM OF INVOLVEMENT	LEVEL	DEGREE OF INFLUENCE	SOURCES
Design	Cenergist	Initiated the research route with CEW and searched for a housing location in the Leeuwarden region.	Co-creation	High	I1, I4, van de Griend and Stoker, (2024)
Design	WoonFriesland	Selected approximately 150 suitable homes and agreed to participate.	Consultation	High	I4, van de Griend and Stoker, (2024)
Design	CEW	Research partner for objective testing.	Co-creation	High	I1, I4, van de Griend and Stoker, (2024)
Design	Resident -- Leeuwarden	Received project information and consent request before participation.	Information	Low	I4, van de Griend and Stoker, (2024)
Implementation	Cenergist	Installed/implemented CF in the selected homes and executed the pilot.	Co-creation	High	I1, I4, van de Griend and Stoker, (2024)
Implementation	WoonFriesland	Selected homes, enabled installation and managed the housing-side implementation.	Information	High	I4, van de Griend and Stoker, (2024)
Implementation	CEW	Collected/analyzed research evidence on water saving and comfort.	Co-creation	High	I1, I4, van de Griend and Stoker, (2024)
Implementation	Resident -- Leeuwarden	Voluntarily participated; received information and provided user experience through the survey.	Consultation	Low	I4, van de Griend and Stoker, (2024)
Evaluation	Cenergist	Reviewed results and used them to assess CF performance.	Co-creation	High	I1, I4, van de Griend and Stoker, (2024)
Evaluation	WoonFriesland	Judged results positively and subsequently implemented CF in approximately 300--400 houses on Ameland.	Co-creation	High	I4, van de Griend and Stoker, (2024)
Evaluation	CEW	Provided objective evidence on water savings/comfort.	Co-creation	High	I1, I4, van de Griend and Stoker, (2024)
Evaluation	Resident -- Leeuwarden	Residents were not informed of final research outcomes.	No participation	Low	I4, van de Griend and Stoker, (2024)

Table D.1.2: Time and level of Involvement of actors in project 2 of the Control Flow

D.1.3 TIME AND LEVEL OF INVOLVEMENT FOR PROJECT 3 OF THE CONTROL FLOW

PROJECT PHASE	ACTOR	FORM OF INVOLVEMENT	LEVEL	DEGREE OF INFLUENCE	SOURCES
Design	The Green Village (TGV)	Identified the water-conservation subsidy opportunity, contacted stake-holders and helped assemble the consortium.	Co-creation	High	I3
Design	KDWS	Represented the innovation after Cenergist's bankruptcy and contributed product expertise.	Co-creation	High	I3,
Design	TU Delft -- researchers	Helped design a scientific testing procedure and future modelling approach.	Co-creation	High	I3,
Design	Rotterdam University of Applied Sciences	Helped design a scientific testing procedure and future modelling approach.	Co-creation	High	I3,
Design	Municipality of Katwijk	Joined because of potential future implementation and connected BPD.	Co-creation	High	I6
Design	BPD	Brought in by Municipality of Katwijk as a potential implementation partner.	Co-creation	High	I6,
Design	Heijmans	Joined as potential implementation partner and helped identify need for an installer.	Co-creation	High	I5, I3
Design	Dunea	Provided drinking-water perspective.	Co-creation	High	I3,
Design	&Flux	Give insights into governance and policy aspects. Provided the opportunity to ask for input from network.	Co-creation	High	I3
Design	Breman	Identified as useful installer perspective and contacted by Heijmans.	Consultation	Medium	I3
Design	Dreamhûs	Less involved because CF had already been applied in its housing stock.	Consultation	Medium	I4
Design	Province	Not yet included in the project.	No participation	None	I3,
Design	Water authority	Not yet included in the project.	No participation	Low	I3,
Design	Resident -- Dreamhûs	Informed/briefed after the research setup was clear.	Information	Low	I3, I7,
Design	Resident -- Katwijk	Not yet included in the project.	No participation	None	I4,

Table D.1.3: Time and level of Involvement of actors in project 3 of the Control Flow

D.2 TIME AND LEVEL OF INVOLVEMENT FOR THE MOBILE FLOOD BARRIERS

ACTOR	FORM OF INVOLVEMENT	LEVEL	DEGREE OF INFLUENCE	SOURCES
Water Boards	Market consultation; wrote complete requirements for tender; discussed needs with supplier.	Information/Consultation	High	I8
GeoDesign Barriers	Adapted design/materials to Water Board requirements and prepared for testing/tender.	Co-creation	High	I8, I10
The Green Village	Invited/hosted actors at Flood Proof Holland and enabled testing/demonstration.	Consultation	Medium	I8, I9, I10
STOWA	Knowledge exchange and research context; organised/linked actors around mobile flood protection.	Consultation	Medium	I9
TU Delft	Research/technical knowledge and questions around flood protection.	Consultation	Medium	I8, I9

Table D.2: Level of Involvement of actors in the Mobile Flood Barriers

D.3 TIME AND LEVEL OF INVOLVEMENT FOR THE DISTRICT HEATING NETWORK

PROJECT PHASE	ACTOR	FORM OF INVOLVEMENT	LEVEL	DEGREE OF INFLUENCE	SOURCES
Design	Municipality of Amsterdam	Drafted tender terms, set €4.5M revolving fund, organized market dialogue days, signed LOI with data centre.	Co-creation	High	I11, I13, I14, Correlje et al. (2025)
Design	Eteck	Informed of tender design, submitted winning bid, and formulated proposed design methodology.	Information	High	I11, I13, Correlje et al. (2025)
Design	Woodencity	Exclusive development partner in Eteck's winning tender proposal as an intended heat off-taker.	Information	High	I11, I12, I13, Correlje et al. (2025)
Design	Data centre	Informed of tender terms, signed LOI with the Municipality for datacenter waste-heat extraction.	Information	Medium	I11, I13, I14, Correlje et al. (2025)
Design	Vattenfall	Informed of tender terms, explored bidding landscape and regional network impacts.	Information	Medium	I11, I13, I14, Correlje et al. (2025)
Design	Heat Consumers / Residents	Unidentifiable during pre-construction phase; excluded due to public procurement regulations.	No participation	None	I12, I13, I14, Correlje et al. (2025)
Design	ELZO / Researchers	Observed tender initiation and research scope setting via municipal and academic collaboration.	Information	Low	I11--I15, Correlje et al. (2025)
Implementation	Municipality of Amsterdam	Weekly bouwteam working sessions, monthly progress reviews, provided legal and spatial advice.	Consultation	Medium	I11, I13, I14, Correlje et al. (2025)
Implementation	Eteck	Authored technical design, business case, and risk dossier; led bilateral stakeholder negotiations.	Co-creation	High	I11, I13, I14, Correlje et al. (2025)
Implementation	Data Centre	Bilateral negotiations with Eteck over extraction tariffs and physical demarcation boundaries.	Consultation	High	I13, I14, Correlje et al. (2025)
Implementation	Vattenfall	Bilateral and joint talks over Eleven Square delivery terms, enforcing prior tariff caps.	Consultation	High	I13, I14, Correlje et al. (2025)
Implementation	Woodencity	Intended off-taker and supply partner; went bankrupt during the bouwteam phase.	Consultation	Low	I11, I12, I13, Correlje et al. (2025)
Implementation	Heat Consumers / Residents	Represented indirectly by real estate developers; no direct consultation or involvement.	No participation	None	I12, I13, I14, Correlje et al. (2025)
Implementation	ELZO / Researchers	Attended weekly bouwteam meetings as process observers; conducted financial modeling and process research.	Consultation	Low	I11--I15, Correlje et al. (2025)

Table D.3: Time and level of Involvement of actors in the District Heating Network

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PROJECT PHASE	ACTOR	FORM OF INVOLVEMENT	LEVEL	DEGREE OF INFLUENCE	SOURCES
Evaluation	Municipality of Amsterdam	Recapitulation meeting, reflection review session, post-delivery process evaluation; assessed Eteck's business case.	Consultation	High	I11, I13, I14, Correlje et al. (2025)
Evaluation	Eteck	Submitted business case, preliminary design, and risk dossier; made final "No-Go" decision to withdraw.	Co-creation	High	I11, I13, I14, Correlje et al. (2025)
Evaluation	Data Centre	Extraction tariff demands and demarcation costs contributed to the "No-Go" outcome.	Consultation	High	I13, I14, Correlje et al. (2025)
Evaluation	Vattenfall	Enforced tariff caps (Afsprakenbrief), contributing to the "No-Go" outcome.	Consultation	High	I13, I14, Correlje et al. (2025)
Evaluation	Heat Consumers / Residents	Not involved or informed during final concession evaluation or concession withdrawal.	No participation	None	I12, I13, I14, Correlje et al. (2025)
Evaluation	ELZO / Researchers	Participated in post-delivery evaluation sessions, harvested process lessons for public heat governance.	Consultation	Low	I11--I15, Correlje et al. (2025)

Table D.3: Time and level of Involvement of actors in the District Heating Network