Towards a natural gas free built environment

A Case study in Overvecht-Noord, Utrecht, on the decision making process of creating a natural gas free neighbourhood

Master thesis submitted to Delft University of Technology

in partial fulfilment of the requirements for the degree of

MASTER OF SCIENCE

in Complex Systems Engineering and Management

Faculty of Technology, Policy and Management

by

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To be defended in public on October 2nd 2020

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Preface

This master thesis is a part of my graduation from Delft University of Technology, MSc Complex Systems Engineering & Management at the faculty of Technology, Policy and Management. This research initially intended to improve decision making processes on creating natural gas free neighbourhoods. The energy transition in the Netherlands is rather big challenge that will sooner or later involve almost everyone. With such a comprehensive task on our doorsteps I found it striking that little progression was obtained so far. Since the energy transition entails implications for the existing housing stock a new dynamic within urban redevelopment makes its appearance. Decision making power is divided over a diverse set of stakeholders, amongst which especially the owner-occupiers form an interesting group that in this new situation obtain a more important role. With a lack of formal instruments to enforce the energy transition Municipalities have to find different approaches to make the transition a reality. More than before urban planning is dependent on the cooperation of various actors, which to me creates an intriguing playing field where the best practices still have to be discovered. During the research it became clear that too little was known about the energy transition to be able to formulate improvements for the decision making process. The process in Overvecht-Noord was so comprehensive and complex that the focus of the research shifted to understanding the process rather than trying to improve it.

Conducting this master thesis research is the biggest scholarly challenge I have faced in my time at Delft University. The corona crisis did not make this challenge any easier. I would like to thank all the members of the graduation committee for their guidance throughout this research. Especially first supervisor Harry van der Heijden who was always available to provide feedback. Additionally I would like to thank Prof. dr. ir. Eefje Cuppen, who was a member of the graduation committee in an earlier phase, for her efforts as second supervisor, and Dr. ir. Ad Straub who has helped me in preparing my master thesis before the graduation committee was formed.

I would also like to emphasise my gratitude towards Mark Elbers who as my contact person in Utrecht helped me a lot in generating data for my research, as well as to the respondents who agreed with an interview without whom I would not have had as much interesting data at my disposal to conduct this research. Lastly I want to thank my friends and family who have supported me throughout my time at Delft University of Technology, they have always been prepared to function as a sounding board to me and without their company my time as a student wouldn't have been the same.

Aloys Suylen
The Hague, 19th of September 2020

Summary

The energy transition in the built environment constitutes a major challenge. In the Netherlands the existing housing stock consists of about 7,8 million dwellings, of which almost all have to undergo energy saving renovations. A first step that is attempted in the Netherlands is abolishing the use of natural gas from the built environment. The initiated programme ''*Programma Aardgasvrije Wijken*'' incorporated testing grounds that were meant to kick-start this objective and form a fundamental knowledge base for other neighbourhoods that are to follow. However, with only slightly under 100 dwellings that actually became natural gas free, out of the 2000 that were intended to be natural gas free by 2020, not everything is going according to plan.

There is no clear tactic on how to approach the task of abolishing the use of natural gas from the built environment. Municipalities are commissioned to lead this transition but they have no experience on how to do this. There is a shift in power and interest amongst stakeholders in comparison to more traditional redevelopment projects in the built environment. Mainly the power is more equally divided over the stakeholders, making it close to impossible for any party involved to make the transition a success on its own. In Utrecht the Municipality decided to reach out to other major players to work together on the task, in doing so creating the *Regietafel EnergieTransitie Utrecht.* A subproject of this newly formed collaborative arena is abolishing the use of natural gas from the neighbourhood Overvecht-Noord. The programme team is responsible for this subproject.

Since the testing grounds for creating natural gas free neighbourhoods were unsuccessful in achieving the goals so far and the playing field of urban (re)development projects has changed, the need arises to understand more about the dynamics of creating natural gas free neighbourhoods. This research has therefore the aim to gain insight in what a process of abolishing natural gas from a neighbourhood entails by using the process in Overvecht-Noord up until the publication of the transition plan as case study. The main research question that is central to this research is:

> *What mechanisms play a role in the decision making process on realising a natural gas free neighbourhood?*

In answering this research question a reconstruction of the decision making process in Overvecht-Noord is made. At the time of conducting this research the process in Overvecht-Noord was still ongoing. Therefore the research focuses on the decision making process in Overvecht-Noord from the initiation of the process until the finalisation of the latest and thus far most comprehensive result: the transition plan for Overvecht-Noord. With the use of the rounds model arenas of importance to the process, the different rounds the process went through, and the interaction between individual decisions are identified. The rounds model divides the process into several rounds that are demarcated by crucial decisions. Each round has its own specific focus or topic, different stakeholders that were active as well as different arenas of importance. The rounds model assumes that the interaction between the individual decisions made determines further decision making and in doing so shapes the final decisions.

The reconstruction of the process is analysed with an analytical framework based on the notion of process management. This notion of process management assumes that negotiation takes place between stakeholders active in a (complex) network of interdependencies. According to process management this context requires a process approach in order to achieve mutually

beneficial outcomes. The notion of process management in its general use describes elements of importance when designing a process. For this research these elements are used to analyse the process instead. In order to do this, indicators for the elements are defined that make up the analytical framework used in this research.

As part of the case study research interviews were conducted with 7 people who were involved in the decision making process in Overvecht-Noord, mainly at the level of the programme team. Among these respondents were representatives of the Municipality of Utrecht, a housing association, Stedin, Energie-U, and Eneco. For the viewpoint of the inhabitants mainly data achieved from desk research is used because it was not possible to conduct an interview with a representative for the inhabitants. Therefore the viewpoint of the inhabitants is a little underrepresented in this research.

In the decision making process in Overvecht-Noord 4 rounds can be distinguished:

- Round 1: initiation of the process
- Round 2: preliminary work
- Round 3: computational work
- Round 4: drafting transition plan

After the initiation, the process can be defined as pre-negotiations in which agreements were negotiated concerning how to address the topic. At first the programme team had a focus on the substantive topic. However, along the way the programme team realised that before they could work out a solution they needed to come up with an approach that would be agreed upon by the involved stakeholders. In the last round the focus shifted from the substantive topic of the process to drafting a plan on how to shape the process that would lead to a decision. This plan was published as the transition plan and since the involved parties agreed upon this document that describes how they will approach the decision making process of making Overvecht-Noord free of natural gas, this document can be identified as a set of process agreements.

There are several arenas to be distinguished in the process. The Regietafel and the programme team are the main arenas that are concerned with policy making. In these arenas housing associations, Stedin, the Municipality, Energie-U, and Eneco were involved. The inhabitants found a way to influence the process by creating neighbourhood initiatives. The two main initiatives in the neighbourhood bundled forces in trying to influence the process. The programme team decided to work more closely together with the neighbourhood initiatives in the future of the process.

The mechanisms that play a role in the decision making process in Overvecht-Noord are:
Finances: the natural gas transition requires a lot of investments, in (alternative) energy systems as well as in buildings. Without (financial) mechanisms to make it affordable to those who cannot afford it otherwise, it is very difficult to get support.
Party involvement: a variety of stakeholders is represented in the main arenas, however the involvement of the inhabitants requires more attention. This group is very important to get to support the plans since a (large) portion of this group has to make investments in their home to make the transition work. If not properly involved in the process this group can show resistance to the plans, rather than support them.
Interests and negotiation: acknowledging and taking into account the interests of the parties involved, as well as creating the room for negotiations provides the participants with a prospect of

gain and a feeling of safety. As long as the parties involved have the possibility to negotiate their interests they have the possibility to achieve a beneficial outcome. This creates an environment in which stakeholders are more willing to participate in the process.
Urgency: participants that don't have a sense of urgency can obstruct the progression of the process.
Agreements: clear agreements made upfront concerning effort, expectations of one another, and responsibilities can increase parties coming through on their commitment.

The research shows that the decision making concerning the natural gas transition requires flexibility. A linear straight forward approach as adopted in the first rounds in Overvecht-Noord where the focus was more on socio-economical aspects mainly led to resistance amongst stakeholders, especially amongst the inhabitants of the neighbourhood. Iterations made during the process, led to adapting the organisational structures, shifting the focus of the process, and rethinking the positions of stakeholders. By making these iterations the process can be adapted along the way to better fit the circumstances and expectancies.

The second lesson to take away from the research is that the urgency of the natural gas transition does not yet seem to sink in with every stakeholder involved. As long as stakeholders are not convinced that at some point in the near future natural gas is no longer provided they don't feel the pressure necessary to move them in the negotiations to meet a consensus.

Lastly, the decision making process in Overvecht-Noord shows that the societal components of the process have at least as much impact as the technical components. In the existing built environment an important part of the decision making power lies with the building owners. This means that every individual owner occupier as well as tenants can exercise some form of influence due to their authority concerning their dwelling. Involving the inhabitants in a participatory process as intended in Overvecht-Noord, however, imposes a dilemma. In Overvecht-Noord it seems that in order to create support amongst the inhabitants for the outcomes of the process, the inhabitants have to feel that these outcomes are also their own idea. This desire to be able to influence the process is shown by the fact that neighbourhood initiatives were initiated as a means to enforce the interests of the inhabitants. However finding the proper construction to involve the inhabitants in the process is difficult because the inhabitants of a neighbourhood form a very diverse group with diverging interests and opinions which makes it difficult to find a legitimate way of representation that does justice to all these individual viewpoints and not just to a select few.

Contents

1. Introduction

The energy transition in the Netherlands is a major challenge, everyone will get involved in one way or another. The Dutch government, along with about 40 other parties, signed the energy accord in 2013 agreeing to reduce the emissions of pollutants and greenhouse gasses, with CO_2 being one of the most important aims (Sociaal Economische Raad [SER], 2013). However, the intended energy transition is not running as smoothly as hoped. Several goals that have been set for energy and climate in 2020, like a 14% share of energy provision from renewable energy sources, will not be met (Planbureau voor de Leefomgeving [PBL], 2017). In fact, the energy transition in the Netherlands falters so much that the Dutch Court of Appeal ruled that the Dutch government has to put more urgency behind it (Gerechtshof Den Haag, 2018).

In order to reach the imposed goals by the Dutch Court of Appeal, 25% reduction of greenhouse gas emissions with reference to 1990 (Gerechtshof Den Haag, 2018), enormous steps in the transition need to be made. An important source of emissions in the Netherlands is the built environment. This might come as a surprise, everyone has heard about the general results of global warming: rising sea levels, melting of the ice caps, and increases in temperature. However, it is less known that 34% of the energy usage in the Netherlands is related to the built environment, and that approximately two thirds of the CO_2 –emissions are related to our homes (PBL, 2016). It is therefore understandable that the Dutch government has set targets in order to reduce the environmental impact of dwellings. All new constructions and major renovations need to be climate neutral from 2020 onwards, with eventually the more ambitious goal of realising a (near) climate neutral housing stock in 2050 (SER, 2013; PBL, 2014). An important aspect in reaching this goal is reducing the CO_2-emissions that are related to the built environment, which cannot be done enough so without reducing the use of natural gas (Van den Wijngaart et al., 2014). Abolishing natural gas in the built environment is therefore put forward as a necessary and important step in the energy transition (Ministerie van Economische Zaken, 2016). The programme natural gas free neighbourhoods (Programma Aardgasvrije Wijken) is initiated as a learning platform in order to support Municipalities and stakeholders in the task (aardgasvrijewijken.nl, n.d.). The harsh conclusion that can be made in 2020 is however that the programme natural gas free neighbourhoods did not meet up to its expectations (Hendriksma, 2020). The only testing ground that made the deadline was Purmerend, and out of the 2.000 natural gas free dwellings that should have been created in total, the number is stuck at less than 100 (Hendriksma, 2020).

1.1 Easier said than done

The by the government imposed targets form a major challenge, especially for the existing housing stock. The built environment exists of roughly 7,8 million dwellings and 1,1 million buildings with a different function (CBS, 2018). Given that all these buildings are owned by different types of people or organisations, one could understand that disconnecting almost 9 million buildings from their dependence on natural gas is easier said than done. Currently the municipalities are responsible for guiding the energy transition in the built environment (Rijksdienst voor Ondernemend Nederland [RVO], n.d.). However, they are not capable of succeeding on their own. Cooperation between

various stakeholders with all sorts of different roles and interests is required (RVO, 2017). This inevitably means that the plans for implementing the energy transition requires enough support from these actors, but currently for a lot of people and organisations it is not clear what (local) governments are planning (Maas, 2018; Platform31, n.d.[b]).

Housing associations are seen as a 'driving force' in the beginning of the transition (Redactie Bouwwereld, 2018). This is not surprising, since roughly 30% of the existing dwellings is owned by housing associations (Centraal Bureau voor de Statistiek [CBS], 2020).However, even though Housing Associations possess a large share of dwelling and have been a useful partner in area redevelopment in the past (Van Bortel & Elsinga, 2007), having the associations on your side is not enough to succeed in banning natural gas. Housing associations no longer have the same investment capacity and are no longer capable of fulfilling the same leading role in area (re)development as they once could (Milosevic & Wong, 2014). It is actually expected that the energy transition will bring changes in the roles and responsibilities of all actors involved (Platform31, n.d.[b]). When building new energy systems, like district heat networks for example, questions rise like; who has to operate the system, who is responsible for maintenance, who has ownership, or how to deal with users, or non-users, and so on. The energy transition imposes new challenges, and requires changes in the way of doing things as well as a certain flexibility to find the best approach.

1.2 Overvecht-Noord

All municipalities in the Netherlands are trying to make a start with the energy transition. One of the frontrunners on the energy transition, and abolishing natural gas from the built environment in particular, is the municipality of Utrecht where they start with one area: the project in Overvecht-Noord. In Utrecht a workgroup is created called *'Regietafel Energietransitie Utrecht'* consisting of several larger organisations amongst which housing associations, the municipality, energy companies, and more who together work on the energy transition in the municipality of Utrecht (Gemeente Utrecht et al., 2017). This workgroup created a programme team with the special task of organising a natural gas free neighbourhood in Overvecht-Noord, which shows that the abolishment of the use of natural gas is taken seriously. In order for Overvecht-Noord to be natural gas free by 2030, the aim of the programme team is to have the plans ready before 2025 (Gemeente Utrecht et al., 2017). Overvecht-Noord forms an interesting project for research due to the already ongoing process where a first basis is already formed and where coordination amongst various involved parties is considered an important aspect of the process.

1.3 Relevance of this research

Achieving a natural gas free built environment is required to lower the burden society poses on the climate and the world itself. The transition to natural gas free neighbourhoods is so comprehensive that it will affect the entire society (Platform31, n.d.[b]). To succeed in this transition almost all 7,8 million dwellings need to be adjusted, which means that the support of housing associations, social landlords, and owner occupiers is crucial. The energy transition in the built environment requires a shift in the way of conducting decision making so that desirable outcomes can be achieved, financially, environmentally, and socially. However, this shift also leads urban (re)development in unfamiliar territory. This research therefore aims to gain insight in how the decision making

concerning the abolishment of natural gas in the built environment is shaped in an empirical example embodied by the neighbourhood Overvecht-Noord.

The process of achieving a natural gas free neighbourhood imposes financial challenges and requires the involvement of a variety of actors. The ownership of buildings is divided amongst several different actors, and the innovative technologies used require expert knowledge (Niessink & Uslu, 2018). Consequently, this issue includes a technical challenge in a multi-actor and multi-level playing field where values of both public and private domain have to be considered. This makes that the issue addressed in this report fits the perspective adopted in the master program Complex Systems Engineering and Management.

1.4 Research questions

The energy transition in the built environment proves to be an enormous challenge. Power and interests are spread among various differing parties and not a single organisation is deemed capable of achieving the energy transition on its own. A first step that is worked on concerning the energy transition is the abolishment of natural gas from the built environment. However, the results thus far are disappointing (Hendriksma, 2020). This research aims to gain insight in what such a process of abolishing natural gas from a neighbourhood entails by using the process in Overvecht-Noord as case study. The main research question that forms the centre of this research is:

What mechanisms play a role in the decision making process on realising a natural gas free neighbourhood?

In order to come to a satisfying answer to this main research question, the research will be guided by the following subquestions.

1. *What entails process management and which conditions should a decision making process meet?*

2. *How is the decision making process and the interactions between the involved actors in Overvecht-Noord shaped, taking into account important elements of the process, the interests and motivations of actors involved, barriers, and possibilities?*

3. *From a process management point of view, what aspects and barriers concerning the decision making process in Overvecht-Noord can be distinguished, while acknowledging the confrontation of the results gathered in subquestions 1 and 2?*

The remainder of this report has the following outline.
In chapter 2 general background knowledge based on scientific literature on the context in which the decision making process on abolishing the use of natural gas takes place is presented. This chapter mainly describes elements of the energy transition that could also be relevant to the transition of natural gas, since there is not much literature available specifically on the decision making concerning the transition of natural gas.

The third chapter discusses the research approach, and the fourth chapter describes the research methods used for conducting this research. Chapter 5 includes an elaborate explanation of the notion of process management and an analytical framework that is derived from this notion. The chapters 6 and 7 are concerned with case study research. Chapter 6 focussing on identifying physical characteristics of the object of research as well as an analysis of the arena structure concerned with the process. Chapter 7 describes the reconstruction of the decision making process in Overvecht-Noord. This reconstruction is analysed in chapter 8 with the use of the analytical framework based on the notion of process management in order to identify aspects and barriers of importance to the process. Finally, chapter 9 presents the conclusions as well as a reflection on this research.

2. Energy transition: challenges in the built environment

This chapter intends to provide insight in what the energy transition in the built environment entails. What are the main challenges that can be expected upfront? By gaining insight in the energy transition in the built environment in general a sense of the context in which the abolishment of the use of natural gas is positioned, is created. Secondly, since creating natural gas free neighbourhoods is a smaller part of the energy transition it is expected that to a certain extent the challenges in the built environment will be similar.

The transition towards natural gas free neighbourhoods is a relatively new process in the Netherlands, which means that there is not yet a lot of research available on this specific topic. Achieving natural gas free neighbourhoods is, however, part of the general energy transition in the built environment. It is therefore expected that both achieving natural gas free neighbourhoods and achieving the entire energy transition in the built-environment will show similarities, both in complications and approach.

Given that this transition is currently in the decision making phase, special attention is paid to information on the planning, decision making and organisation around this topic, as well as to the energy transition and urban (re)development in general. The literature used in this review is gathered mostly through Google Scholar and Scopus by using various combinations of keywords mainly including combinations of 'housing', 'built environment', 'climate neutral', 'energy transition', 'natural gas free', 'organisation', 'decision making' and 'planning'. In addition, the snowballing method was applied. The information is presented starting with an overview of the goals concerning the energy transition as well as important practices, findings and ideas with reference to regulation. Furthermore the context on the local level is discussed, followed by main barriers that come in play, and the call for a new governance approach. Finally the knowledge gap in the scientific literature is discussed, from which research questions are derived.

2.1 Regulation

The targets set by the Dutch government to reduce the environmental impact of buildings follow from the European Energy Performance of Buildings Directive and the Energy Accord 2013, and are twofold: 1) from 2020 onwards all new constructions and major renovations must be climate neutral and 2) a climate neutral housing stock by 2050 (SER, 2013; PBL, 2014). In this context climate neutral indicates that either there are no emissions, or emissions are compensated by (on-site) sustainable energy production to reduce emissions elsewhere (PBL, 2014).

Important components in achieving these goals, as stated in the 2017 Dutch coalition agreement (regeerakkoord), are reduction of the heat demand, increasing heat supply of alternative sources, and increasing the use of renewable energy (Platform31, n.d[a]). Getting rid of natural gas in the built environment is perceived to be a crucial first step (Ministerie van Economische Zaken, 2016; RVO, 2017).

By setting these targets, the Dutch national government imposes movement towards a climate neutral housing stock on home owners in a more or less top-down manner. Various policy instruments could be used for steering the process in the right direction. Ürge-Vorsatz et al. (2007) identify four categories: 1) regulatory and control mechanisms, 2) economic/market-based instruments, 3) fiscal instruments and incentives, and 4) support, information and voluntary action.

They stress that there is not a single instrument that would suffice on its own. Given that every instrument has its own strengths and weaknesses, it is advised to use a policy package (Ürge-Vorsatz et al., 2007).

Other literature emphasises the need for approaching the transition in a less top-down manner. A shift towards a more governance approach, in which mutual dependency between (local) governments, housing associations, tenant (associations), homeowners, and housing industry institutions is desirable (Tambach et al., n.d.; Nieboer et al., 2011; Visscher et al., 2016). This would require an empowering and supporting framework to encourage stakeholder participation (Kadarpeta, 2010), and an active and personal approach for communication seems to work best (Tambach et al., n.d.).

2.2 local level

The Dutch Ministry of Economic Affairs and Climate Policy more or less delegates the transition task to the municipalities. It is up to them to guide the involved parties into the transition, whilst taking into account all the different interests and big changes, such as physical changes to buildings, different ways of energy provision, different technologies, and different governance approaches (Rijksdienst voor Ondernemend Nederland [RVO], n.d.).

Generally speaking the Dutch municipalities play an important role in urban development. Not only do they represent the public interest, they also have legal powers to decide on plans (Tambach, 2009). However, when it comes to urban development in existing urban areas, municipalities mostly don't have ownership over the buildings, especially in residential areas, which inevitably means that they are dependent on cooperation with the parties that do have ownership (Tambach, 2009).

With reference to urban renewal projects in the Netherlands, which basically holds for the period from 1990 to 2015, Van Bortel and Elsinga (2007) describe that housing associations generally formed a powerful partner in local networks. They explain that associations own a relatively large share of the housing stock in renewal areas and that they had substantial investment power. This meant that there were important interdependencies between the municipality and the housing associations. They needed each other's resources to achieve the goals they set for the renewal projects.

Even though housing associations are willing to take energy saving measures, they are facing financial constraints (Vringer, Van Middelkoop, & Hoogervorst, 2016). Since the new Housing Act 2015 the possibilities for housing associations to make profitable investments that are not related to social housing are restricted to 10% of their budget and only if private parties are not interested (Milosevic & Wong, 2014). On top of that, the landlord levy, a contribution by housing associations demanded by the government to reduce the national debt (Rijksoverheid, n.d.) has a big negative impact on the investment capacity of associations (Finance ideas, 2017). This feeds a suspicion that a shift in power and responsibilities amongst parties involved in urban renewal projects is taking place. Especially since housing associations acknowledge this suspicion. In a discussion on the new Housing Act 2015 representatives from associations state that the practice of urban (re)development is constantly changing and that they can no longer play a leading role in the process in the way they used to (Milosevic & Wong, 2014).

2.3 Barriers

There are several aspects to be distinguished that are of importance for achieving a successful energy transition in the built environment. Some of these aspects appear not too difficult to cope with, however, in the current situation it does seem that all together they obstruct the energy transition to run smoothly.

Finances

Finances are always an issue. Housing associations face the in 2.2 mentioned financial constraints, which, in combination with high prices of (not fully innovated) technologies, makes that corporations choose for a short scope (Visser, 2014), can be hesitant to invest (Nieboer et al. 2011), and tend to opt for small-scale renovations that have limited effect on the climate neutrality of the building (Kroon, 2013; Filippidou et al., 2016).

Not only housing associations face financial struggles. For owner occupiers it is also unlikely that they will be able to finance the required energy renovations for their dwelling. A difficult factor concerning the necessary investments is that high costs have to be made almost directly, whilst the benefits will only show in the long run (Opstelten, Weterings, & Versteeg, 2015). Adding to this it appears that owner-occupiers and tenants are ill-informed and therefore lack knowledge and appreciation for the 'return on investment' of energy saving measures (Vringer, Van Middelkoop, & Hoogervorst, 2016; Murphy, Meijer, & Visscher, 2009). It is therefore not surprising that Faber and Hoppe (2013) find that there is a low demand for energy renovations, which in turn strengthens the finding of Vringer et al. (2016) concerning the already ongoing inclination of builders to avoid to build more energy-efficient in order to prevent damaging their competitive position.

Behaviour and tenant involvement

Besides financial aspects that need to be tackled there are also behavioural and involvement issues in play. Owner occupiers have the authority to decide what happens to their own property to a certain extent. Also tenants need to be involved simply because landlords of apartment buildings are not able to carry out required renovations unless more than 70% of the tenants agree with them (Vringer, Middelkoop & Hoogervorst, 2016). However, even though energy renovations and adjustments are basically imposed by a top-down objective, it does not necessarily mean that tenants don't have any benefits. Reducing the energy usage of their dwelling will result in a lower energy bill. Nevertheless, the costs of the renovations are for the housing association. This mismatch between costs and benefits is called the landlord/tenant dilemma (Ástmarsson et al., 2013) and needs to be worked around, which again imposes the need to involve tenants in the process. In communicating towards the target groups it is also important to not limit the scope to the positive effects for the environment, but also address issues that are important for this specific group, such as financial benefits and health effects (Van der Veen, 2012).

Tenant involvement could even go further than merely being informed, making financial arrangements, or simply giving permission for renovations. Structures of self-governance, where occupants organise themselves to contribute to a climate neutral housing stock, for example by means of local energy generation, are not only considered viable but sometimes even the most preferred option (Breukers et al., 2017).

Cooperation required

Since the position of housing associations in urban (re)development is weakened, and municipalities generally don't own many buildings, the dependency on cooperation with other local stakeholders rises (Tambach, 2009). It is even stated by Opstelten, Weterings and Versteeg (2015) that it is impossible for the energy transition in the building sector to be successful if market, research and development (R&D) and the government don't find a way to leave their comfort zone and work together on the issue.

Additionally it turns out that municipalities don't have effective legal instruments at their disposal to improve the energy efficiency in the existing housing stock (Tambach, 2009). This means that building owners basically have the (exclusive) right to decide on whether or not adjustments will be made to their property, and if they decide to make their property more energy efficient, they can to a great extent decide on which measures they want to implement.

When taking an area into account, rather than merely an individual unit, such own decision making authority of building owners can prove to be a challenge. This can be illustrated with the following line of thought. The most important alternatives to natural gas can roughly be distinguished as collective networks and individual solutions (RVO, 2017). Collective or integral solutions focussing on an area, such as district heating, appear not to be used very often (FIlippidou et al, 2016). A possible explanation for this observation can be that the success of collective networks is dependent on the market. For example for a collective heat network to be financially feasible, enough demand for heat is required (Hoogervorst, 2017). If a portion of the home-owners decide to go for an individual solution (such as all electric) the heat network can turn loss-making.

In addition, constructing, operating, and maintaining a heat network requires sufficient technical knowledge as well as knowledge about networks (Niessink & Uslu, 2018). A lot of times this means that external expertise or parties need to get involved, such as energy companies that operate the network. However, they will obviously only be interested in operating such a network when it is certain that the demand will be sufficient, indicating an important uncertainty that needs to be tackled. Given such dependencies it is not surprising that Niessink and Uslu (2018) emphasise that each party involved needs to know what their roles and responsibilities are and therefore a good partnership and commitment are deemed very important.

2.4 Call for new governance

Following the so far mentioned findings in scientific literature, it becomes more and more clear that the 'usual way of doing things' does not necessarily hold for the energy transition in the built environment. There are more people involved, and there are different stakes as well as a shift in power dynamics and responsibilities.

It is evident that municipalities need to find a suitable approach in order to successfully bring about the energy transition. However, the scientific literature is not clear about which approach that should be. One element that is repeatedly called upon, though, is about stakeholder involvement. In order to realise a sector transition it is very important to unite the involved parties with a single shared

vision (Opstelten et al., 2015), and Niessink and Uslu (2018) define good partnerships and commitment of all parties as prerequisites for success.

Edelenbos and Klijn (2005) state that in a classical approach of area (re)development it is generally the case that first a policy proposal is made before citizens and interest groups would get involved. Since actor involvement occurs after the development of policy proposals, this more traditional way of dealing with area development seems not to be in line with the required cooperation and involvement that has to bring about a shared vision because these plans could feel more like an enforcement than something they worked on themselves as well.

Also Hoppe and Van Bueren (2015) indicate that new ways and approaches are required because they expect that the challenge of today cannot be tackled with the governance and network modes, and top-down policy instruments of yesterday. Marlen and Barth (2012) join this thought by stating that "*conventional urban planning processes are too linear and do not provide enough room for interaction and feedback by end users" (p.362)*. The practice of planning is slowly moving towards more inclusionary approaches. However, even though planners are aware of the importance of involving a diversity of actors in the planning process, in practice it appears they do not necessarily act accordingly, or at least enough so (Savini et al., 2014).

Complex network

The scientific literature does not point into a specific direction in search for a new governance approach concerning the energy transition in the built environment. However, there is a more general interesting growing awareness that could be relevant, namely governance in networks. Network governance refers to a so called horizontal form of policy making where next to the government also private actors, businesses, and NGOs have influence (Khan, 2013). Especially the notion of networks seems interesting for the organisation of natural gas free neighbourhoods. That is because key elements of networks incorporate links between public and private actors, as well as interdependencies between all parties involved (Khan, 2013; Nieboer et al., 2011). Additionally the horizontal positioning of actors, combined with actor specific goals and resources, makes that everyone is reliant on cooperation with the others (Van Bortel & Elsinga, 2007). In many ways a lot of the before discussed challenging or even obstructing factors that are in play in the organisation of natural gas free neighbourhoods show similarities with these aspects of networks. Most importantly, in this situation public actors don't have enough formal power to regulate the transition in a top down manner, nor is there any actor that has access to all the resources required to reach their goals on their own.

Although there is not yet much support or evidence in scientific research that supports a network governance approach for the energy transition in the built environment specifically, in more general terms there is support for its use in the built environment in general. First of all there is the observation that network governance is not only playing a more important role in urban climate politics (Khan, 2013), but also that several authors indicate that a network perspective would suit as a framework for public-sector decision making (Van Bortel & Elsinga, 2007). These viewpoints are eventually also supported by research. Network governance shows clear positive aspects that progress the process, such as mobilising actors in favour of shaping a political agenda and making way for niche-developments through cooperation (Khan, 2013). Also Van Bortel (2009) finds that a network approach is useful to analyse decision-making processes, and Van Bortel and Elsinga (2007)

concluded that, when taking the organisation of the social housing sector into account, a complex network approach makes it possible to study into the interactions between actors. These findings, combined with the existing expectations of academics, indicate that a network perspective could be relevant and provide useful insights, also for the energy transition in the built environment.

3. Research Approach

For this research it is opted to work with a case study approach. Due to the ''case specific character'' of the energy transition in the built environment (De Leeuw & Groenleer, 2018) the task of initiating and executing this transition takes mostly place at the local level (RVO, n.d.). A one size fits all approach is most likely not going to work (De Leeuw & Groenleer, 2018). As discussed in chapter 2: Energy transition, the transition in the built environment shows a lot of similarities with a complex network. Such a network is very difficult to understand when observing it from a broad point of view. It is necessary to dive into it more closely since the complexity of the network cannot be understood when looking at it from afar. It is therefore desirable to construct a research approach that does not operate on a high abstraction level, but addresses the topic in more detail. In order to obtain such a detailed insight, it is applicable to opt for a qualitative explanatory case study approach (Johannesson & Perjons, 2014; Harrison et al., 2017; Yin, 2012). This approach allows explaining the outcomes of individual cases (Mahoney & Goertz, 2006) and provides the possibility to focus on understanding the specific dynamics present in these cases (Eisenhardt, 1989).

3.2 Case: Overvecht-Noord

The project that will be the object of research for the case study is the neighbourhood Overvecht-Noord in Utrecht. The gas infrastructure in this neighbourhood needs to be replaced or removed in a relatively short amount of time. The network operator does not find investing in replacing the gas network worthwhile since the national policy stipulates that in about ten years natural gas is not used anymore (Penris, 2017), which introduces a high chance of the network becoming obsolete. This creates an urgency within the neighbourhood to start with the abolishment of the use of natural gas. Where the national goal is to abolish natural gas from the built environment by 2050, in Overvecht-Noord the aim is to achieve this goal already in 2030 (Penris, 2017).

Overvecht-Noord functions as one of the testing grounds for natural gas free neighbourhoods. There are 27 neighbourhoods that are a part of the testing ground project. The reason that Overvecht-Noord is chosen as object of study is mainly because in Utrecht the Municipality prefers a participatory approach. Stakeholders in this municipality work together on the energy transition in a horizontal playing field (Gemeente Utrecht et al., 2017). This provides a setting in which a new approach to decision making in the built environment is used. This approach is of special interest to this research since scientific literature, chapter 2, points in the direction that the energy transition requires a different approach with mutual coordination. Overvecht-Noord is also chosen as object of research due to its frequent coverage by (local) news sources and the fact that the process, in comparison to other testing grounds, is already well underway.

In order to tackle the transition, the *programme team Overvecht-Noord aardgasvrij* is created (from now on referred to as ''programme team''). This programme team is imposed with the task of delivering a plan on how to make Overvecht-Noord free of natural gas use, which is later defined as no direct use of natural gas for heating, cooking, and warm water (Gemeente Utrecht et al., 2017). The programme team consists of representatives of several parties including; the municipality of Utrecht, network operator Stedin, energycompany Eneco, resident cooperation Energie-U, and Stichting Utrechtse Woningcorporaties (consisting of amongst others the housing associations Mitros, Portaal, and Bo-Ex) (Rijksoverheid, 2019). In this programme team a very diverse

set of actors are represented. In October 2019 the programme team delivered a transition plan which introduces an outline for the further approach of the task at hand (Gemeente Utrecht et al., 2019). The finalisation of the transition plan provides the possibility of focussing on the process that led to this finalised plan. Even though the process is on-going at the time of conducting this research, focussing on the part of the process that led up to the transition plan creates a demarcation of the object of research that incorporates a start and a finish.

4. Research Methods

This chapter discusses the research methods used to answer the subquestions and ultimately the main research question. There are three subquestions that require answering in this research, which leads to three parts of this report. In the first section the choice for the model used in making a reconstruction of the object of research is discussed. The second section introduces the choice for the analytical framework used to analyse the decision making process, and the third section provides the structure of this research.

4.1 Reconstruction of the Overvecht-Noord case

The goal of the reconstruction of the Overvecht-Noord case is understanding how the process in Overvecht-Noord is shaped. The reconstruction is structured with the use of the rounds model as described by Teisman (2000). This model offers support in understanding complexity and interaction patterns between interdependent actors, and is typical for complex decision making processes (Bekkers, 2012)

The rounds model is perceived by Teisman (2000) to be more applicable/suitable in to complex situations where the decision making power does not lie with a focal actor. Two other major models for observing decision making are the phase model and the streams model. Teisman (2000) makes a comparison between the three models and explains in what sense the rounds model is of added value.

According to Teisman (2000) The main assumptions of the phase model are that a focal actor determines a dominant definition of the problem solution and that decision making occurs in phases, generally characterised by a phase of formation, a phase of adoption, and a phase of implementation. The second model, the streams model, presumes three separate types of streams; problem stream, solutions stream, and politics stream. When these three streams come together an opportunity is created to come to a decision and support for policy changes. The outcomes of the process in the streams model depend on the dynamics within and the link between the three streams.

The rounds model, explained in Teisman (2000), more or less combines certain aspects of the two other models and differs in certain elements. The base assumption of the rounds model is that several actors play a role in the decision making process, where the actions or decisions made by one actor can influence decisions made by other actors. In this sense the rounds model fits really well in the notion of a network society where no single party is in charge and actors are dependent on one another. Each actor has its own agenda, its own problems or problem definitions, and possible solutions. The outcome of a decision making process is then dependent on the interactions between the actors.

One of the striking aspects of the context of creating natural gas free neighbourhoods is the distribution of power. Where the municipality has the power to determine a land use plan (betemmingsplan) in which it is formalised which physical changes to the built environment can be made, and in this way steer towards a certain heat source in the neighbourhood, a building owner can still choose for a different solution. Similarly, if building owners would want a certain solution, let's say a heat network, there has to be someone willing to provide it, and the land use plan has to

allow for it. This distribution of power shows that the decisions an individual actor would be able to make is influenced by the decisions made by other actors concerned with the abolishment of natural gas in the neighbourhood. In that sense the rounds model is more appropriate to analyse the decision making concerning the abolishment of the use of natural gas in an existing neighbourhood than both the phase- and the streams model. This applicability is mainly due to its focus on the interactions, which would not be clearly visible when using one of the other two models, therefore the rounds model is preferred.

As Teisman (2000) points out, in order to analyse decision making a reconstruction of the object of study needs to be made. In making this reconstruction the researcher has to adopt a predefined set of assumptions, hence the use of a model. As described before, the rounds model assumes that policy is created through the interaction of decisions made by individual actors. These interactions are presumed to take place during a number of distinguishable periods referred to as decision making rounds (Teisman, 2000). These rounds are typically defined by their starting and concluding points (Teisman, 2000) and have a distinctive focus on a specific topic or task (Enserink et al., 2010).

Since the playing field is characterised by a variety of actors with actor specific resources and interests, it seems logical that some rounds are more interesting to certain actors than to others. A rounds model approach depicts the decision making as a dynamic process of interactions. Therefore it doesn't assume the outline of the process to be set in stone but rather subject to change. When a round ends a new round can incorporate significant changes; players can join or leave and even the rules of the game can possibly be adapted (Teisman, 2000).

Another useful concept that can help observing decision making is the notion of arenas. Arenas refer to the places where interaction between actors occurs. In order to describe an arena, focus must be on the decision making situation, the involved actors, and the organisational arrangements that are involved concerning the interactions that take place (Van Bueren et al., 2003). The structure of a decision making process can be relatively simple, with only one or a few arenas in which the debate takes place. However, it can also be very complicated with a high amount of varying arenas which can also be active simultaneously (Van Bueren et al., 2003). This indicates that a round is not necessarily played out in one arena, nor does one arena only focus on one specific topic. It has to be taken into account that each round can be characterised by one or several differing arenas which coexist simultaneously and each arena can have different characteristics (Enserink et al., 2010; Van Bueren et al., 2003).

In order to be able to analyse the decision making process in Overvecht-Noord an understanding of the process has to be created first. In order to create this understanding the decision making process is reconstructed with the use of the rounds model. This means that an overview of the actors is provided showing their interests, resources, and motivation. The process is reflected in a set of rounds distinguished by what turned out to be crucial decisions, and the arenas in which the interaction took place are presented as well. The definitions of the most important concepts, as used in this research, are presented in table 4.1. By combining these strands of information, the interaction between the actors and their decisions, as well as the dynamics and complexity of the process, are made visible.

Table 4.1: Concepts of the rounds model		
Concept	**Definition**	**Additional explanation**
Decision making round	A period with a focus on a specific topic or task, and ends with a 'crucial decision'(Enserink et al., 2010). During this period interaction takes place and actors make (individual) decisions (Teisman, 2000).	"A round of decision making begins and ends with the adoption of a certain combination of a problem definition and a (virtual) solution by one or more actors" (Teisman, 2000 p. 947)
Crucial decisions	"Decisions that in a later period of decision making serve as an important point of reference for the behaviour of the actors that are present at the time (Teisman 1998)" (Teisman, 2000 p. 944)	
Arena	"Places where specific groups of actors interact on an issue and make choices on specific aspects of the issue (Cohen, March, and Olsen, 1972; Koppenjan, 1993)" (Van Bueren et al., 2003 p. 195)	Consists of - Set of actors - Decision-making situation in which they can be found - Organisational arrangements involved (Van Bueren et al., 2003 p. 195)

Data collection

The data collection method for the reconstruction of the decision making process in Overvecht-Noord consists of desk research and semi-structured interviews. Interviews generally allow for gathering complex and sensitive information (Johannesson & Perjons, 2014), which would provide a more comprehensive and in-depth understanding of the decision making process (Yin, 2012). Semi-structured interviews requires for the researcher to interpret the answers as well as more time investment than would be required when using for example structured interviews (Johannesson & Perjons, 2014). However, this case study focuses on collecting data that entails in-depth information concerning among others ideas and perceptions, while observing an environment in which strategic behaviour might very well be in play. A semi-structured interview allows the researcher to create interaction with the respondent (Yin, 2012) which makes that this approach is perceived to be more capable of collecting this kind of information. For this reason a semi-structured interview is a suitable data generation method for conducting this case study.

For the purpose of this research interviews were conducted to gain insight in the decision making process in Overvecht-Noord on abolishing the use of natural gas. An overview of the respondents is provided in table 4.2. For reasons of confidentiality the names of the respondents are not mentioned. Interviews were conducted with 7 people who in one way or another were involved in the process. All these people have at some point been a part of the programme team/project team, or have at least been in close collaboration with the programme team/project team. With most of these people the interview was conducted in person, however due to the corona crisis three of the interviews were conducted by phone.

Even though attempts have been made to get an interview with representatives of the Regietafel and representatives of the inhabitants, eventually none would agree to the request. A representative of the inhabitants did however provide a short reaction stating an indication of his opinion concerning the process via e-mail.

Table 4.2: Overview of respondents

Respondents	**Organisation**	**Involvement**	**Means of contact**
Representative of the network operator	Stedin	Member of programme team	Interview, in person
(built)Environment manager	Independent	Member of programme team	Interview, in person
Representative of the Municipality	Minicipality of Utrecht	Member of programme team	Interview, in person
Representative of a Housing association	Portaal	Member of programme team	Interview, in person
Representative of an energy company	Eneco	Member of programme team (city team)	Interview, by phone
Representative of an energy cooperation	Energie-U	Member of programme team	Interview, by phone
Programme manager	Independent	Member of programme team	Interview, by phone
Respondent H. Active local resident		Inhabitant actively involved in the neighbourhood	Personal correspondence

All interviews are recorded and transcribed in order to process the data. The information provided in the interviews is then categorised in two ways. Firstly a categorisation is made conform a timeline of the process. In this way the information is grouped over time so that a first image of the reconstruction becomes clear and the occurrences in the process can be linked together. The second categorisation entails a grouping of information conform the elements of the analytical framework. This grouping makes it possible to analyse different statements and occurrences that are relevant to the separate elements.

4.2 Analytical framework

In order to bring structure to the case study it is opted to work with a framework. De Bruijn et al. (2010) describe the notion of process management, which in their view is useful in dealing with decision making in complex networks. The basic design principles of Process Management, as described in the book of De Bruijn et al., will therefore be used as main input for defining an analytical framework that allows analysing the information obtained concerning the case study. The notion of process management describes what a good negotiation process entails and is mainly used to design a process rather than analyse it. It is therefore necessary to convert this notion into a framework that can be used to analyse the process.

For Process Management De Bruijn et al. (2010) take a complex network where top-down decision making is not possible, amongst others because of mutual dependencies between actors, as

starting point. Coming to decisions has to be done through a process of consultation and negotiation with other parties. This situation can be recognised in the process in Overvecht-Noord where the stakeholders decided to work together on the task of abolishing the use of natural gas from the neighbourhood. They do this because of the realisation that a unilateral decision will likely lead to resistance, and that the link between the built environment, energy-infrastructure, and energy production is very strong and need to be adjusted to one another (Gemeente Utrecht et al., 2017). Based on experience with the notion of process management and these initial indications of similarity between the case in Overvecht-Noord and the starting points taken by De Bruijn et al. (2010) it can be expected that the elements of process management can assist in providing insight in dynamics or mechanisms that play a role in the decision making process in Overvecht-Noord. Therefore the analytical framework used in this research is based on the core elements of process management. The construction of this framework is presented in chapter 5.

4.3 Analysing the data

The reconstruction of the Overvecht-Noord case will provide insight in how the process in Overvecht-Noord is shaped. At this point it is interesting to compare the process in Overvecht-Noord with the analytical framework, presented in chapter 5, embodied by the design principles relating to process management. With the use of the analytical framework the empirical data is analysed in order to determine which aspects and barriers were of importance in the decision making process in Overvecht-Noord.

The structure of this research that leads to answering the research questions is presented in figure 4.1. This research flow diagram indicates how the elements of this research are combined in order to answer the main research question. First an analytical framework is derived from the notion of process management. Secondly, the decision making process in Overvecht-Noord is reconstructed from which rounds, arenas, obstacles, and opportunities relevant to the process can be derived. These aspects can then be analysed with the use of the analytical framework. This leads to insight in aspects and barriers of importance to the decision making process in Overvecht-Noord, and how they affect the process. Finally, taking all the information and outcomes obtained in the research into account, the mechanisms that play a role in the decision making process in Overvecht-Noord can be determined.

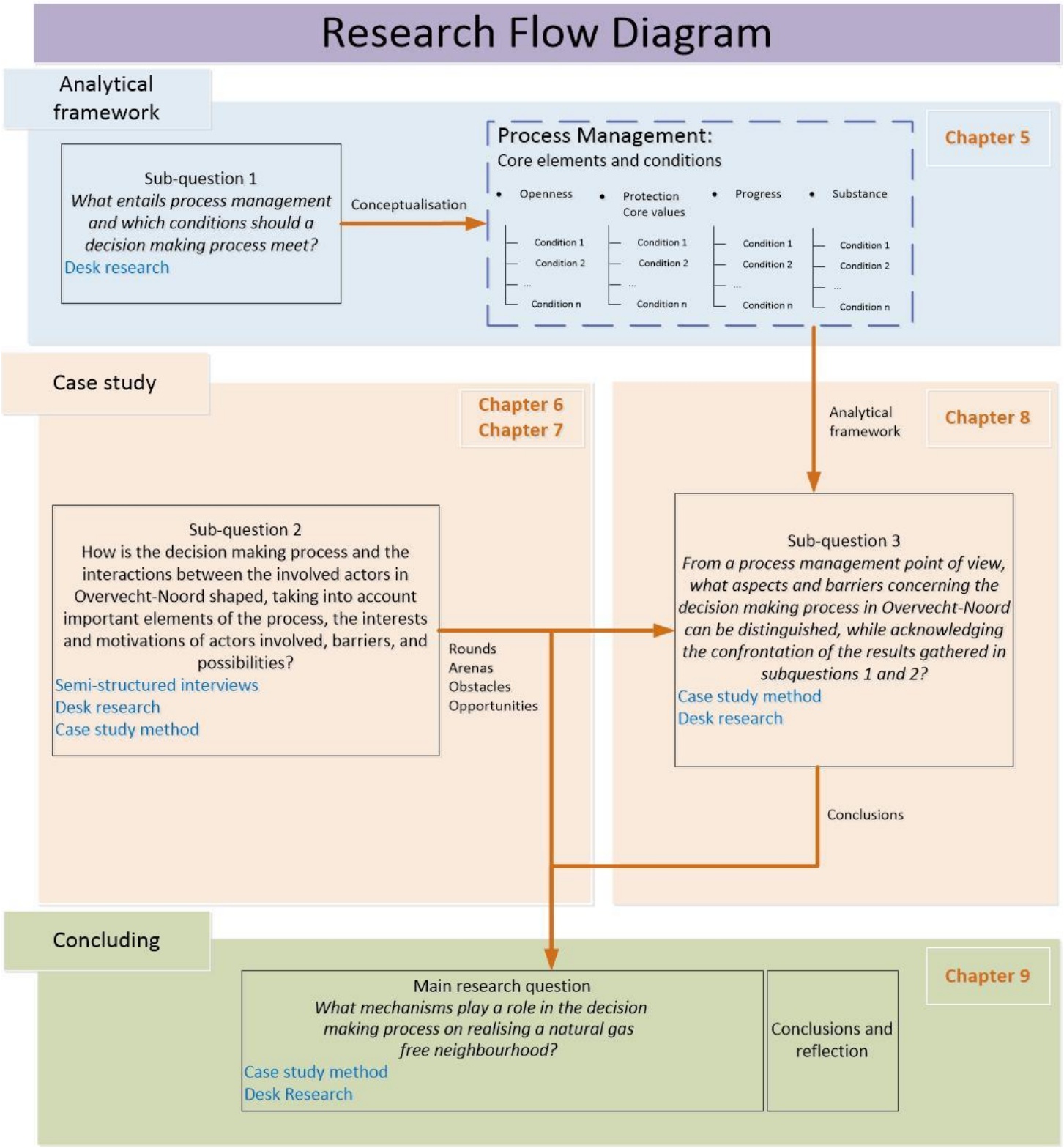

Figure 4.1: Research flow diagram

5. Analytical framework based on process management

As described in chapter 2 the abolishment of the use of natural gas in the built environment is expected to be a complex challenge. Important characteristics that were brought forward in that chapter come down to the interdependency of the parties involved with the task. These parties vary from the municipality, who has the responsibility to achieve the climate goals set by the national government, to companies concerned with energy provision and operation of energy networks, and eventually even building owners for whom a lot might be about to change as well. Each of the stakeholders has either an interest in the transition, something to gain, something to lose, and/or something to offer. However, common idea here is that the stakeholders are required to combine their strengths and resources, simply because the abolishment of natural gas in the built environment is too comprehensive to deal with for only one stakeholder. Because of the variety and multiplicity of interests in the task, it is to be expected that people who have something to lose will try to obstruct the process. In order to come to a desirable outcome it is therefore implied that all (relevant) stakeholders have to cooperate on the issue and align their interests.

The first 3 sections of this chapter provide a short summary of the notion of process Management. This notion is described elaborately in the book "Process management: Why project management fails in complex decision making processes" by De Bruijn, Ten Heuvelhof, and In 't Veld (2010). The first section explains the general idea of process management. The second section dives into the core elements that make up a good process design and the third discusses some additional remarks. The information provided in these sections is fully extracted from the book by De Bruijn et al. (2010), also the terminology for the core elements and design principles are adopted directly from this book. In the fourth section the core elements of process management are translated into an analytical framework.

5.1 Introduction to Process Management

When faced with a decision making task that is to be carried out within a (complex) network of interdependent actors De Bruijn, Ten Heuvelhof and In 't Veld (2010) propose using a process approach rather than a project approach. In their book they describe the notion of process management, which provides with information on how to design a process in order to reduce resistance of other involved parties, create broader and more balanced perceptions, and allow for making all new insights and information available within the process.

The main idea of process management is that the process has to do the work. During the process parties are brought together. They negotiate about process agreements, the topics they need to address, what they expect from each other, etc. During these encounters the parties will have to show their nature, their interests and their core values. In doing so, each party at the table will be able to learn about the interests and values of other parties. They will be provided with information on the viewpoints of others, which allows them to put the situation, and thus their own values and perceptions, into perspective. The general idea is that this process of negotiations and learning makes the dilemmas clear to each party involved, which in turn should lead to a sense of understanding that the issues cannot be solved without making compromises.

Eventually the parties need to work towards an outcome of the process. This can certainly be difficult since interests are not necessarily always aligned. Trade-offs and compromises need to be made in order to come to a decision or outcome. This is not simply a game of winner takes all, but more a matter of give and take. In order to balance interests and gains it is therefore important that there is enough ''substance'' on the table to come to an equal and fair distribution of gains and losses (baten en lasten) (De Bruijn et al., 2010).

The idea of letting the process do the work is about interaction, negotiation, discussion, and learning. It is therefore crucial to make sure all necessary parties are actually willing to participate in the process. A lot of the focus of the design principles of process management therefore are about facilitating (participation in) the process. The parties need to be willing to participate and in order to create this willingness there has to be a sense of urgency, they have to feel safe/protected, and they have to acknowledge the possible gains they could get in return for their efforts.

5.2 Core elements of Process Management

The notion of Process Management recognises four core elements, defined as: openness, protection of core values, progress, and substance. All these elements have to be present in order to successfully facilitate a decision making process. Of course the way in which they should be incorporated, as well as the extent to which it is necessary, depends from case to case and is hardly ever exactly the same. The core elements are intertwined in some sort of way, increasing for example progress could reduce the substance and the other way around. This indicates trade-offs in the design of a process, eventually there has to be found some kind of balance between the elements as well. More parties joining the table (openness) means more interests to keep in mind, more people that can obstruct decision making, which can reduce the progress in the process.

5.2.1 Openness

The first core element is Openness. The general focus of this element is on involving parties in the process. An important part of openness is therefore thinking about how to create an environment that makes the most important and valuable stakeholders want to join the process. In order to create this open character of the process the book describes three design principles (De Bruijn et al., 2010, p. 43):

1. All relevant parties should be involved
2. Process agreements as a means to make substantive choices
3. Transparency of both process design and process management

Involvement relevant parties

Given the complex nature of the main issue for which the process is intended, it is valuable to have all relevant parties joining in. The required information for defining and solving the issue is divided amongst various actors and one can only use the information that is available to them. By bringing the parties together in the same process all this knowledge becomes available within the process as well. Secondly, the chance to end up with solutions that are supported by stakeholders is higher when these stakeholders themselves are part of the decision making process. During the process the

actors should be given the opportunity to negotiate on their behalf. Having the opportunity to be heard and being part of the (thought) process that leads to certain outcomes, provides the possibility for a better understanding of the outcomes as well as a commitment to the process.

Process agreements

Process agreements are agreements concerning the process that are made in advance by means of negotiations between potential participants in the process. These agreements could be seen as the rules of the game and could be explicit and formalised. In order to enhance the openness of the process these agreements should contain a minimum amount of substantive choices. Rather than starting off the process with a number of decisions already taken, there should be a certain amount of freedom to come to decisions through the process that is to follow.

Process agreements set the tone for the process. During the formulation of the agreements the parties get the opportunity to explore what the process would have to offer. At the same time it could be possible for the parties to discuss or even negotiate not only the rules of the game, but also to propose topics for the agenda of the process.

Transparent process design and process management

The design of the decision making process should be clear to all parties. Taking away uncertainties around the process itself would make the parties feel more at ease. Some aspects that might be of interest to the parties concern how the process is to take place, how their interests are protected, which parties would be involved, and what the rules for decision making will be.

5.2.2 Protection of core values

For a party to commit to a process would mean that this party is at risk that the end result turns out to be not in its favour. Protection of the parties' safety and core values focusses on minimising the (sense) of risk for the parties. When there is a (high) chance the results are not going to be in favour of the interests of a specific party, this party has an incentive to steer clear of the process rather than to support it. Having elements in play that prevent a party from only 'losing' takes away some of the concerns that a party might have about joining the process. Design principles that are of interest here are (De Bruijn et al., 2010, p. 43):

1. Protecting parties' core values
2. Commitment to the process rather than to the result
3. Commitments to subdecisions may be postponed
4. There are exit rules

Protection of parties' core values

Core values are not just some interests a party has concerning the topic of the process. Core values are described as the actual fundamental values of the party. Agreements have to be made in order to guarantee the parties that they will not be forced to make certain decisions or adopt behaviour that are in conflict with their core values.

Commitment to the process rather than to result

At the start of a process the end result is not clear yet. The desired outcome is to be defined during the process, which means that for some parties the result can be less desirable than for others. Allowing the parties not to commit to the result straight away, but to the process instead means that the parties are not necessarily stuck to the outcome when it turns out to be undesirable for them. This prevents a feeling of being trapped in the process and creates safety and space. This safety and space makes it less risky for parties to join the process. Once they actually joined the process they work towards an end result, experiencing the obstacles, gaining insight in the complexity of the issues, learning about the interests and values of others, and making an investment in the process. This can create a commitment over time which would feel much more natural than when it is forced upon them.

Commitment to subdecisions postponed

A decision making process generally consists of a string of (smaller) decisions that in the end lead to an end result. The end result could then consist of a coupling of these subdecisions which form a package. In order to protect the core values of parties and maintain interest and willingness to cooperate in the process a commitment to these subdecisions should be postponed as long as possible. As long as there is no commitment to the subdecisions there is still room for negotiations and adaptations of the decision. This room provides the possibility for parties that have the prospect of taking a loss due to the decision to find a compensating gain as well, instead of leaving the process because of the prospect of a loss. At the same time, when a party would gain from a subdecision, it might lose its interest in the process since it has nothing more to gain from it and thereby lose the incentive to cooperate.

Exit rules

Exit rules allow parties to leave the process (under certain conditions). These exit rules provide the possibility to walk away from the process when it turns out that for example a parties core values will be affected. Rules for how, when, and under which circumstances a party is allowed to leave the process can be defined in the process agreements. Being able to leave the process after a while lowers the threshold to join. Therefore on the one hand it is important to have an exit option available, however, on the other hand parties should not be able to leave the process too easily without good reason.

Exit rules work in different strategic ways. Having the option to leave the process lowers the risk a party takes and thus makes it easier to join. Secondly, getting parties involved in the process improves the amount of knowledge and resources available. Given that every party involved has some kind of interest, something to offer, and maybe even something to lose makes that there are both incentives to make sure parties are not tempted to leave the process, as well as incentives to stay in the process. After all, it is a game of give and take.

5.2.3 Progress

A process should not be something that costs a lot of effort and time without making any progress. Having a lot of different stakeholders at the table, with each its own interests and values, can cause a lot of discussion and even conflict. If every party keeps holding on to its own values for example the negotiations won't go forward and the process becomes sluggish. The design principles that guarantee progress are (De Bruijn et al., 2010, p. 43):

1. Stimulate early participation
2. The prospect of gain as incentive for cooperative behaviour
3. Creating 'quick wins'
4. Ensuring that the process is heavily staffed
5. Transferring conflicts to the periphery of the process
6. Tolerance towards ambiguity
7. Using options for command and control created by the process

Stimulate early participation

Parties may be reluctant to join the process early on; the timing is not right, starting conditions are not interesting enough, waiting and maybe joining later might have more benefits and requires less effort. The waiting mechanism is especially fruitful in situations where parties make agreements to, for example, reduce emissions. If a party would join in the third round and agrees to a certain reduction percentage, it would effectively have to reduce less than the parties that already made a reduction in the first two rounds as well.

This mechanism can be resolved by setting an 'early baseline date'. This means that parties that join in later have to comply with a reduction to the same baseline date as the parties that already joined in previous rounds.

Another aspect that could help resolving the waiting incentive is emphasising the voluntary nature of the process. This lowers the threshold to join and early participants have the opportunity to introduce aspects in the process that interest them specifically.

The prospect of gain as incentive for cooperative behaviour

Eventually a big incentive for parties to join a process is the gain it could bring them. If the process is appealing enough to the parties they recognise the need to keep the momentum in the process to come to a good and quick conclusion. At the same time it is important that gain does not pay off too soon because when a party receives the gain it no longer has the incentive to cooperate, contribute, and progress the process. The emphasis of this design principle is therefore on the prospect of gain, in order to maintain the incentive.

Creating 'quick wins'

This design principle points out the importance of a balance between postponing subdecisions and creating quick wins. On the one hand taking subdecisions too soon can displace incentives because the gain could already be harvested. On the other hand postponing subdicisions can create the impression that the process is sluggish, after all there are not really any concrete achievements to

point out. In order to keep the momentum going and remain interest in the process quick wins are therefore also necessary. There should be found a balance between the postponement of decisions and generating quick-wins. The quick-wins should not come too soon, but should also nog be too far out of reach.

Ensuring that the process is heavily staffed

A heavy staff refers to the positions the representatives of parties in the process take within their organisation. Representatives that are seen as 'heavy staff' are people that have some kind of authority in their organisation; they are capable of making commitments to the process without having to take a lot of time for consultation with their organisation. At the same time have more 'prominent' people as representatives in the process enhances the image and authority of the process towards others.

Transferring conflicts to the periphery of the process

Processes in which a lot of different stakeholders with varying interests and values are present tend to hold a potential for conflicts. These conflicts can negatively influence the dynamics between the participants in the process. A way to deal with this is to use a layered organisational structure for example. In this way conflicts can be sorted out in a different (or lower) level whilst the representatives in the 'decision making group' are not affected by it too much.

Tolerance towards ambiguity

Allowing a certain amount of ambiguity when it comes down to specifying terms can have a stimulating effect on the progress in the negotiations. Ambiguous terms often have a 'feel good' vibe and allow parties to have the feeling that their preferences are still in the running. This sense of still being able to make a gain or execute their preference can create an incentive to continue participation in the process.

Using options for command and control created by the process

Generally command and control are not associated that much with a process design. However, it can be used as a big stick to motivate parties to progress the process. A mechanism like this works well when there is a party that is capable of making a unilateral decision. The parties are then provided with room for negotiation in the process, but with the knowledge that if they are not capable of arriving at a good and quick end result this one party will take a unilateral decision which could possibly be less beneficial to the participants.

5.3.4 Substance

The results of the process require to entail substantive decisions. The results should meet certain quality standards, other ways it is doubtful whether the end results can actually be perceived as 'good' in the first place. Conflicting interests and incentives to progress the process can result in substantive poor decisions. Design principles that help to maintain substantive elements are (De Bruijn et al., 2010, p. 43):

1. The roles of experts and stakeholders are both bundled and unbundled
2. From substantive variety to selection
3. The role of expertise in the process

The roles of experts and stakeholders are both bundled and unbundled

Substantive experts should be involved in the process to 'safeguard' the substance. Where stakeholders generally serve their own interests and are searching for gains through negotiations, the substance may be lost out of sight in some instances. Experts can introduce the latest insights which the decision makers may not have known otherwise. However, the role of the experts has to be both bundled and unbundled. It has to be bundled in the sense that their input has to be congruent with what exactly is going on in the process and has requires some kind of authority or acceptance level in order for the stakeholders to take the information seriously. On the other side the role of experts needs to be unbundled from the stakeholders in order to prevent the experts leaning towards a certain side. The objectivity of the role of the experts has to remain.

From substantive variety to selection

Here the principle of divergence and convergence plays a part. At the start of the process a large number of insights and ideas should be generated. Having a big variety of insights and ideas ensures that the most relevant ones are included and therefore have a chance to be addressed in the process. This also means that all relevant ideas and insights have been part of the process, they have been considered and addressed, which increases the authoritativeness of the decisions because the selection process cannot easily be called into question.

From generating this variety one has to move towards selecting the best option(s). This selection gains its strength due to the consideration of a high variety of options, a second requirement is that there is a link with the variety of options considered, and there should be support amongst the involved stakeholders for the selected option(s) as well.

The role of expertise in the process

As stated before, there should be a role for knowledge and expertise in the process in order to safeguard substantive elements. Science can however not always provide definitive answers, which provides room for uncertainty and differing answers as well. The issues concerning decision making processes are not fully made up of hard facts and will always have room for soft values, which in turn gives room for differences in opinions.

These differences in opinion amongst experts and scientists make it difficult to provide a clear, optimal and unambiguous contribution to the process. In order to deal with this issue, the interaction between scientists and experts should be shaped as a process as well. By means of discussion and knowledge sharing scientists can come up with a more clear representation of the information; identifying issues they agree upon and reducing the amount of issues they don't agree upon (e.g. by presenting them within margins or under certain conditions).

5.3 Remarks concerning the elements of process management

What becomes clear about the core elements discussed in the previous section, is that they are intertwined and affect one another. This is illustrated in figure 5.1. It must be noted that this influence is not only linear from element 1 to 4, they can also influence one another in different ways. For example, speeding up the process does not only result in the chance that the substance is overlooked, it can also enhance the chance that core values are overlooked. This illustrates that

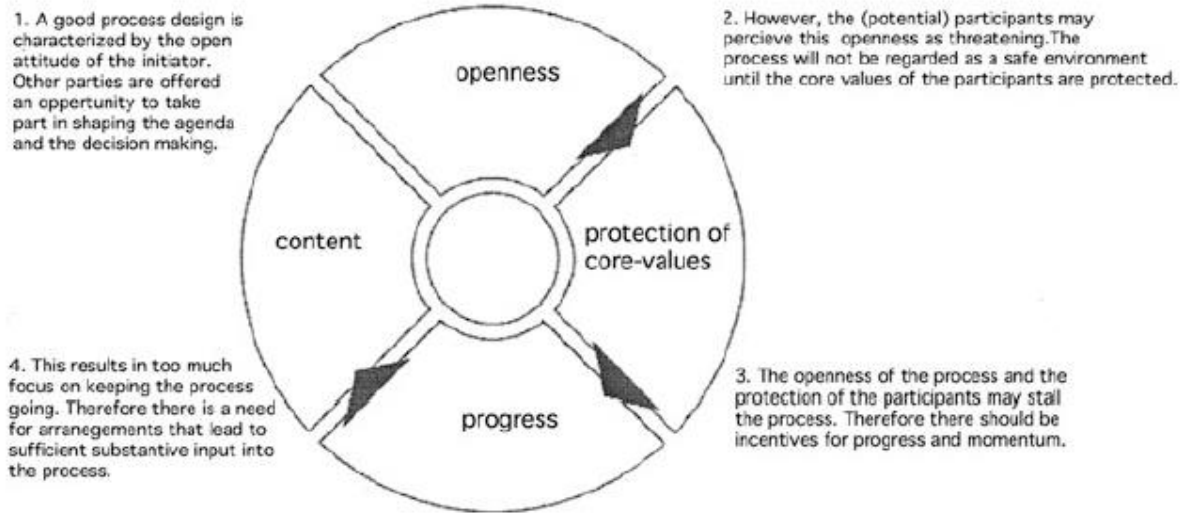

Figure 5.1: The four core elements of a process design (De Bruijn et al., 2010, p. 42)

when it comes down to these core elements it is not so much about having a lot of each, but also about balancing them out. Increasing the progress could lead to a decrease in substance or a decrease in trust in the protection of core values, whilst mechanisms to increase the protection of core values and to increase substance can make the process more sluggish. It is therefore important to observe the dynamics within the process to see which elements really need improvement and which elements may already have been covered.

Pre-negotiations versus substantive negotiations

Observing the principles of a process design there is a distinction to be made between pre negotiations and substantive negotiations. The substantive negotiations refer to the process of decision making itself; the core of the process where negotiations on substance take place in order to come to a decision concerning the central topic for which the process was initiated. The elements of *Progress* and *Substance* are predominantly affecting this part of the whole process. The elements of *Openness* and P*rotection of core values* on the other hand also play a role during the substantive negotiations, but are mainly effectuated during the pre-negotiations. *Openness* and *Protection of core values* play an important role in inviting parties to join the process. These two elements are about creating an inviting, clear, and protected environment in which parties feel safe and respected enough to participate. This atmosphere needs to be maintained during the substantive negotiations phase, but needs to be effectuated before this phase starts.

An important aspect of the pre-negotiations concerns drafting process agreements. These agreements include the rules the parties agree upon to use in order to reach decisions. Process agreements

5.4 Analytical framework

The process in Overvecht-Noord will be juxtaposed to Process Management in order to determine similarities and differences between the two. In order to be able to put the data retrieved by means of desk research and semi-structured interviews into the perspective of Process Management an analytical framework is formulated.

Process Management consists of four core elements, which form the main structure of the analytical framework. Each of these elements can be defined by a number of criteria/conditions that are characteristic for the corresponding element. These criteria/conditions are defined following the introduction of Process Management in section 3.2 and are presented in table 5.1. In formulating the criteria/conditions the focus has been on recognising the main principle or idea of the elements. A lot of the in section 3.2 described design principles can more be defined as a means to achieve a certain criteria/condition, instead of making up one of its own. Therefore not all design principles are considered to be necessary in order for a process to adhere to the principles of process management. Whether or not certain design principles are useful when designing a process differs from case to case. For this reason not all design principles described in section 3.2 can be directly recognised in the analytical framework.

Table 5.1: Analytical framework Process Management

Openness		**Indicators**
Party involvement	All relevant parties are involved/participate in the process. Additionally, there are options for parties to easily join the process.	- Broad representation of stakeholders in the process - Rules and agreements about joining - High acceptance of parties joining
Room for negotiation	The decisions made in the process should not be made unilaterally. Participants have the possibility to negotiate on their behalf, being able to try to steer the decision making, and have a say in the decision making as well.	- Interests of parties involved are considered during the process - No unilateral decision making
Agenda setting	The agenda of the process is not determined unilaterally. Participants are given the opportunity to present topics for the agenda they wish to address.	- Broad variety of actors proposed topics for the agenda - Topics for the agenda are discussed and decided on together

Transparency	The design of the process should be clear to all parties	
Decision making	All elements concerning the decision making should be transparent. This means it should be clear how decisions will be taken, what the procedures will be, how the responsibilities are divided, what medium can be used for decision making, etc.	- Deadline set for decision making upfront - Rules for decision making defined and communicated upfront - Criteria that guide decision making are set and communicated upfront or early in process
Process	All elements concerning the process itself should be clear as well. Who is joining the process, where do meetings take place, what are the protocols and procedures to adhere, what is expected from the participants, etc.	- End goal clearly defined upfront - Rules communicated upfront (who, when and where) - Deadlines are clear to all stakeholders and set up front

Protection of core values		**Indicators**
Protected core values	All parties involved should have the feeling that they will not be asked, required, or pressured to adhere to certain outcomes or behaviour that may negatively affect their core values.	- Indications of resistance or dissent
Exit rules	Exit rules refer to the agreements made concerning the possibility to cease participation in the process. Parties should be provided with an option to leave the process under certain circumstances. The conditions under which a party can choose to do so should be defined upfront in the process agreements.	- Possibility to leave the process - Conditions defined concerning circumstances under which one can leave - Conditions defined concerning at what point in the process one can leave

Progress		Indicators
Incentives for progress	The parties involved should have a (proper) incentive in order for them to speed up the process instead of stalling, slowing down, or even obstructing the process.	- Gains for each party are clear - Parties encounter a sense of urgency
Heavy staffed	The representatives in the process should have some kind of authority in the organisations they represent in order to prevent losing time due to consultations with the organisation. The representatives should be able to make certain decisions on the spot.	- Delay due to consultation - Representatives have a position with relevant decision making power in the organisation they represent
Eliminating obstacles that slow the process down	There should be mechanisms in play that help overcome/reduce obstructing factors.	- Alterations specifically made to overcome issues in the decision making process

Substance		Indicators
Negotiated knowledge	There should be feedback mechanisms with experts in play in order to safeguard substantive elements. Input from experts and scientists is required in order to make sure the negotiations in the process maintain a certain level of substance. Alternatives discussed should be (technically) feasible, realistic, and actually solve the problem.	- Authoritative information - Every party involved uses the same, decided upon, information - New amount of joint knowledge produced
Unbundling experts and decision makers	The experts involved in the process should have their focus on what is going on in the process and in such a way support the process with 'customised' input. On the other hand the experts should remain objective. The viewpoints taken by the experts should not lean towards supporting a specific actor, nor should there be generated a feeling/possibility that this is the case.	- Inclusion of external research groups or experts - Experts involved who are detangled from parties in programme team - Fields of expertise relate to energy transition - Assignments for research groups formulated by programme team

Variety of options considered	There should be a broad variety of options considered at the start of the process. Later on this variety should be brought back to a (small) selection, but all relevant options should be taken under consideration at some point.	- All possible options have to be identified - These options should have been included in an initial assessment

By means of desk research and especially semi-structured interviews information concerning the process in Overvecht-Noord is obtained. This information consists to a great extent of actor specific observations and interpretations because the individual perceptions of stakeholders play an important part in their willingness to cooperate in the process and whether or not they perceive the process to be successful. The information obtained can be categorised conform the analytical framework presented in table 5.1.

The aim is to describe the process in terms of the criteria/conditions of the analytical framework. By doing so, it becomes clear which factors are of importance in the decision making process in Overvecht-Noord up until now and to which effects they lead. With this information it is possible to deduce what, according to Process Management, the strengths and weaknesses in the process in Overvecht-Noord are.

5.4.1 Elaboration of Analytical Framework

The notion of process management is described by De Bruijn, Ten Heuvelhof, and In ‘t Veld (2010) in a very conceptual manner. This is very useful to create an understanding about decision making in a complex network of interdependent actors. However, the conceptual character of the explanation on the design principles provided by De Bruijn et al. (2010) does not provide a proper operationalisation of the elements of Process Management that grants the opportunity to determine to which extent Process Management is used, or even successful, given certain/specific situations, cases, projects, or processes. An operationalisation of the elements of Process Management is desirable in order to be able to link the process in Overvecht-Noord to the concept of Process Management. An entire operationalisation is however not possible within the timeframe of this research, therefore the further specification of the analytical framework is limited to the identification of indicators. In order to determine these idicators the elements of Process Management as defined in table 5.1 are further defined/described in terms that yield valuable information about the case in Overvecht-Noord. This is done by creating an understanding with the use of scientific literature about the concept of the elements, to then couple this to characteristics that are deemed important by the researcher concerning the abolishment of natural gas in the built environment or specifically to the process in Overvecht-Noord

Openness

The openness of the process refers to creating an environment where stakeholders feel invited and get a clear understanding what is expected from them and the process.

Party involvement

The party involvement consists mainly of two criteria: (1) all relevant stakeholders should be involved in the process and (2) there must be a possibility for parties to join.

In order to determine whether or not all relevant stakeholders are involved in the process, there has to be an indication of what the relevant stakeholders are. Based on a listing of relevant actors concerning a transition in heat provision provided by (consultancy firm) *de argumentenfabriek* (Ebskamp & Verbraak, 2019) and Rijksdienst voor Ondernemend Nederland (RVO, 2017), it can be concluded that, on the local level, at least the following stakeholder groups are of importance to the decision making process:

- Municipality Utrecht
- Housing associations
- Users: landlords, owner occupiers, tenants
- Infrastructural network operators

Not necessarily every party has to be participating in the process themselves, as long as they (feel) their interests are represented.

Secondly, there should be possibilities for parties to join the process. Aspects of importance here concern:

- There are rules and agreement concerning allowing other parties to join in place
- High acceptance of parties joining (in contrast to only on invitation)

Room for negotiation

The participants in the process should have the room to negotiate on their behalf. A first indicator that parties were able to influence the process is:

- The interests of parties involved are considered during the process

Additionally, the way in which decisions are made provides an indication whether or not the involved parties have the room to negotiate. For example, when decisions are made unilaterally only one party holds most of the power. When all parties are able to influence the decision making the decision making, power is more evenly distributed, which provides the participants a position that enhances their negotiation power. Therefore the following aspect is considered an indicator:

- No unilateral decision making

Agenda setting

The setting of the agenda relates to creating a process that is interesting for every important stakeholder. By being able to influence the topics that are the focus of the process ensures that the process holds something interesting to every party. Indicators for agenda setting therefore refer to:

- A broad variety of actors proposed topics for the agenda
- Topics for the agenda are discussed and decided on together

Transparency

The transparency in a process concerns both the decision making as the process itself. It has to be clear to every party how both the process and the decision making will be shaped.

Decision making

The decision making should be transparent in the sense that the participants know how and when decisions will be made. Indicators for the transparency of decision making therefore include:

- There is a deadline set for decision making upfront
- The rules for decision making are defined and communicated upfront (concerning the way in which to come to a decision, e.g. one party, voting, unanimous)
- The criteria that guide the decision making are set and communicated upfront or early in the process

Process

The transparency in the process refers to the character of the process. This concerns its goals, its purpose, and the execution. The process is therein also defined by the parties that participate in it. The indicators for the transparency of the process are:

- The end goal is clearly defined upfront
- Rules are communicated upfront, concerning who, when, and where meetings take place
- Deadlines are clear to all stakeholders and set up front

Protection of core values

The protection of core values concerns safeguarding the essential 'being' of the participants in the process. A party could not comply with anything that goes against what they in essence stand for. Two main aspects are important when observing the protection of core values, first measures are taken that protect the core values of all parties involved in the process from the start till the end.

Protected core values

When a party is faced with complications concerning their core values they are most likely not going to easily go along with it. Therefore resistance of participants or indications of dissent can be seen as indicators for the protection of core values

- Indications of resistance or dissent

Exit rules

parties should be able to leave the process in order to provide them with an option to back out when they feel their core values are not protected enough anymore. Proper exit rules are in play when:

- There is a possibility to leave the process
- There are conditions defined which state under what circumstances a party can leave
- There are conditions defined at which time or moment a party can decide to leave

Progress

The process should remain progressing according to the planning. Incentives and decision making authority preserve the progress in the process, as well as finding effective ways to deal with obstructing factors.

Incentives for progress

The involved parties need to have enough incentive to be motivated to contribute to the process and come to decisions or outcomes in a timely manner. These incentives can stem from either contextual factors or from within the process itself. Indicators for incentives for progress are:

- The gains for each party are clear
- Parties encounter a sense of urgency

Heavy staffed

The representatives of the organisations in the process should have a certain decision making authority that allows them to react adequately during negotiations. Indicators for such authority are:

- Delay due to consultation
- Representatives in the programme team have a Position with relevant decision making power in the organisation they represent

Eliminating obstacles that slow the process down

Obstacles that slow down the process are often difficult to define upfront. Therefore most of them will be faced during the process. In order to deal with these obstacles there have to be some measures taken or certain aspects adapted along the way. Therefore an indicator for eliminating obstacles that slow down the process is:

- Alterations specifically made to overcome issues in the decision making process

Substance

Negotiated knowledge

De Bruijn et al. (2010) state that an important part of the substance of a process is characterized by generating negotiated knowledge. Due to the complex nature of issues addressed in the process it is not possible to come to one objective truth (De Bruijn & Ten Heuvelhof, 2008; Hommes & Vinke - De Kruijf, 2009), Hence also the need for a process approach. The participants in the process bring knowledge to the table and depending on the subject additional knowledge should be generated as well. All this knowledge can vary and can maybe even be directly opposite to one another. Involved parties in the process are more likely to accept (a choice for the) information when they have been a part of the generation process (Eshuis & Stuiver 2005; Hommes & Vinke - de Kruijf, 2009).The group therefore has to collectively decide on which information they find crucial, which information they consider relevant, and which information they are going to work with (De Bruijn et al., in Bax, 2011, p

29 - STAP, 2014; De Bruijn & Ten Heuvelhof, 2002) (Koppenjan & Klijn, 2004; Hommes & Vinke - De Kruijf, 2009).
Indicators for the negotiation of knowledge are:

- Authoritative information: the information should be accepted by all parties (De Bruijn et al. 2002)
- Every party involved uses the same, decided upon, information
- New amount of joint knowledge produced

Unbundling experts and decision makers

The participants in the process can gather all sorts of information, ''negotiate knowledge'', and decide on what information they will use during the process. However, the negotiated knowledge should be scientifically valid (and socially robust) as well in order to make sure the substance of the process is meaningful (Hommes & Vinke - De Kruijf, 2009). A way of producing scientific valid knowledge and checking the knowledge on this scientific validity is to involve scientists and experts in the process. These scientists and experts should however not be influenced by specific viewpoints of the involved parties in the process (De Bruijn et al, 2010). The indicators taken into account are:

- Inclusion of external research groups or experts
- There are experts involved who are detangled from the parties in the programme team
- Experts have an expertise concerning the energy transition
- Assignments for research groups are formulated by the programme team (instead of by one party)

Variety of options considered

In order to create and preserve the authority of the decision making in the process it is considered important to (seriously) consider a broad variety of options, from which in the end a few are chosen (De Bruijn et al., 2010). Concerning the abolishment of the use of natural gas in the built environment there are several options available to take into account. Indicators for the consideration of a broad variety of options are:

- All possible options have to be identified
- (These) Options should at least have been included in an initial assessment on possibilities for Overvecht-Noord.

6. Overvecht-Noord: the case

In this chapter a first impression of the case Overvecht-Noord is provided. The first section describes the case in terms of physical aspects. The second section lays out the different levels and their corresponding arenas that are connected to the process. The identification of arenas continues in the third section where the focus is on the local level arenas. The final section provides insight in the main stakeholders in the process, their motivations, interests, and responsibilities.

6.1 Physical aspects of Overvecht-Noord

The demarcation of the area of Overvecht-Noord that the task focuses on is represented in figure 6.1. The total amount of dwellings in this area amounts 8335 objects, of which 13% is already considered to be free of natural gas. The most striking observation concerning these dwellings is that 69% is owned by the three housing associations; Mitros and Portaal account for over 2000 dwellings each, and Bo-Ex is responsible for just under 1000 dwellings. An overview of the distribution of dwelling to ownership in combination with the type of energy and heat provision is provided in table 6.1.

Of all dwellings, around two thirds is built before 1975 and most of these are not properly insulated yet (Gemeente Utrecht et al., 2019). A lot of these buildings stem from the ’60s and are characterised by high-rise buildings with a lot of green space in between.

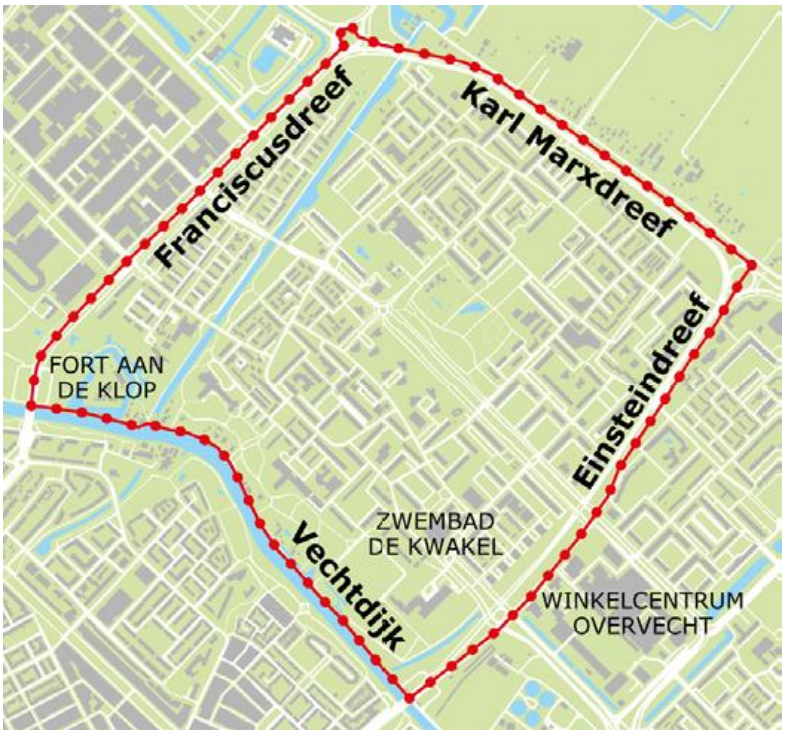

Figure 61: Demarcation Overvecht-Noord (Gemeente Utrecht et al., 2019, p. 6)

In this area there are three different types of energy infrastructure present; heat network, (natural) gas pipes, and an electricity network (Gemeente Utrecht et al., 2019). The heat network currently does not reach every dwelling in the area, about 6000 dwellings are connected to the heat network. For the larger part of these buildings there is still additional natural gas used for cooking. Secondly, with reference to the heat network, it must not be overlooked that the heat provision of the network cannot yet be considered as fully sustainable (Gemeente Utrecht et al., 2017).

Table 6.1: Amount of dwellings in ownership and type of energy/heat provision (Gemeente Utrecht et al., 2019, p. 7)

Ownership	Natural gas free (heat network, electricity)	Heat network gas for cooking	Natural gas heating	Other systems	Total	%
Owner-occupiers	155	150	1173	6	1484	18
Private rental	496	80	242	3	821	10
Housing associations	156	4597	628	*360	5741	69
Other	254	2	17	16	289	3
Total	1061	4829	2060	385	8335	100
%	13	58	25	4	100	

6.2 Overvecht-Noord Arenas

The issue of natural gas free neighbourhoods in the Netherlands is dealt with at different levels. Taking the process in Overvecht-Noord as focus point an overview of the different levels at which efforts are being made can be provided, illustrated in figure 6.2. These levels focus on different area demarcations, starting at the national level and moving down to smaller areas until reaching the local neighbourhood level. Generically speaking, at the higher levels there are goals set and guidelines provided. The smaller and therefore more specific the area demarcation becomes, the more specific the plans become as well. Each demarcation also entails its own arena(s). In this research the definition of arenas as described by Van Bueren et al. (2003, p. 195) is adopted: ''Places where specific groups of actors interact on an issue and make choices on specific aspects of the issue (Cohen, March, and Olsen, 1972; Koppenjan, 1993)". The arenas that are relevant to the decision making process in Overvecht-Noord are introduced in this section. The arenas that are of specific importance to the decision making process in Overvecht-Noord are discussed more elaborately in section 6.3.

National level

As stated before, the energy transition in the Netherlands is a goal set by the Dutch national Government. The targets set to reduce the environmental impact of buildings follow from the European Energy Performance of Buildings Directive and the Energy Agreement 2013, and are twofold: 1) from 2020 onwards all new constructions and major renovations must be climate neutral and 2) a climate neutral housing stock by 2050 (SER, 2013; PBL, 2014). In this context climate neutral indicates that either there are no emissions, or emissions are compensated by (on-site) sustainable energy production to reduce emissions elsewhere (PBL, 2014).

Important components in achieving these goals, as stated in the 2017 Dutch Policy Agreement (regeerakkoord), are reduction of the heat demand, increasing heat supply of alternative sources, and increasing the use of renewable energy (Platform31, n.d[a]). Getting rid of natural gas in the built environment is perceived to be a crucial first step (Ministerie van Economische Zaken, 2016; RVO, 2017). In the more recently published Climate agreement of 2019 the government emphasised

that a lot of buildings in the built environment desperately need an upgrade in insulation and that most of the buildings are still heated with the use of natural gas (klimaatakkoord, 2019). They further stipulate that the abolishment of the use of natural gas has somewhat of a priority, not only to reduce CO_2 emissions, but also to be able to put a halt to the gas extraction in Groningen and in this way to reduce the impact in this area amongst others by preventing earthquakes.

Decisions made in arenas at the national level very much influence decisions made at lower levels. These national arenas are crucial in defining law and regulations, as well as what type of subsidies, if any, will be made available by the national government to support creating natural gas free neighbourhoods. Arenas at the national level (therefore) are concerned with issues of providing instruments that will be available to local level authorities. In this sense decisions made in national arenas can influence decisions made in lower level arenas.

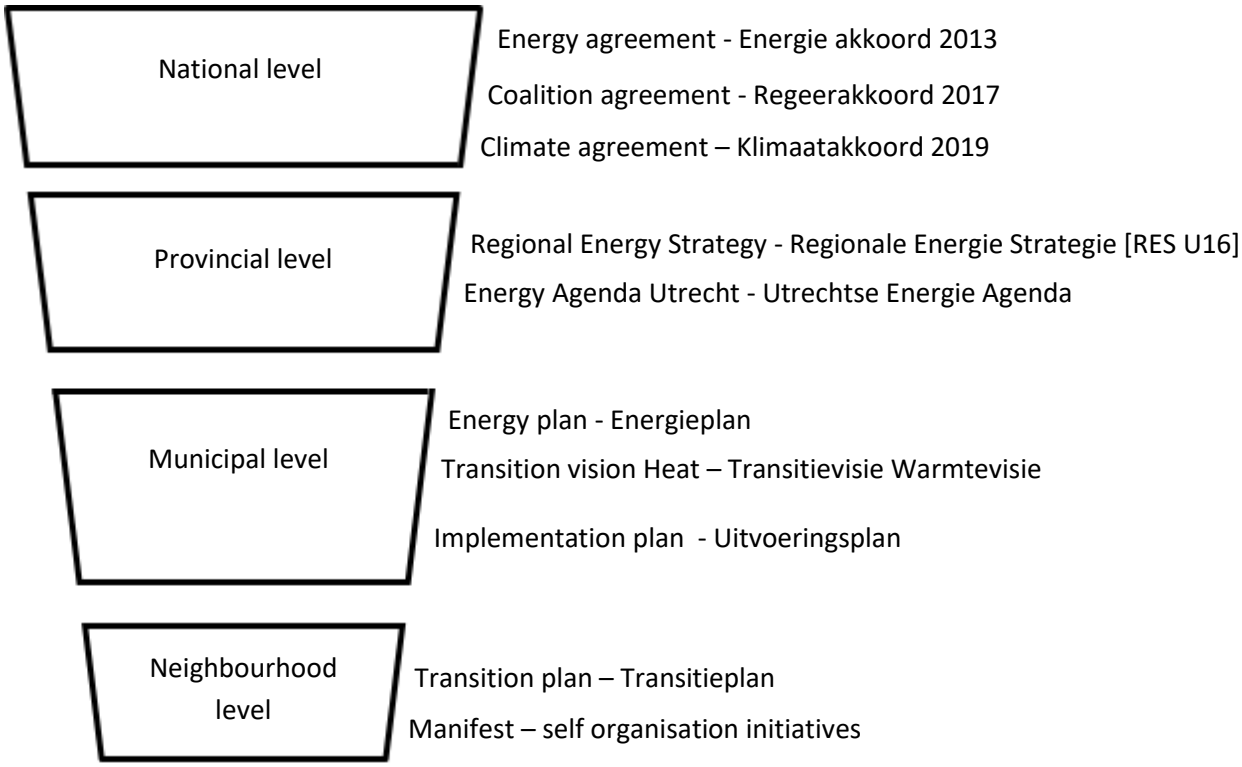

Figure 6.2: Organisational levels and corresponding products

Provincial level

On the one hand it is argued that the energy transition should be tackled at the local level because the case specific character of the transition requires tailored solutions instead of a one size fits all approach (RVO, n.d.). At the same time there is an understanding that not all solutions are necessarily limited to the boundaries of local areas. Existing power plants for example are very unlikely to provide energy for only a very specific area or neighbourhood, but rather cover an area of several cities or even provinces. Besides, some existing large energy sources are considered to be sustainable but who has the rights to this sustainable energy supply? In other words, which areas are already covered to a great extent and which areas still have to invest? The same kinds of questions are true when it comes to creating sustainable energy sources. For example, when building a large solar power plant does it only provide energy for the area in which this plant is positioned?

Questions like these have to be answered and negotiated at an appropriate level. This is the use of the Regional Energy Strategy (Regionale Energie Strategie [RES]), an arena where 'energy regions' decide on how to comply with the agreements stated in the Climate Agreement (Regionale Energie Strategie [RES], n.d.). The municipality of Utrecht is part of the so called RES U16, which is an energy region existing of 16 municipalities that work together on the area specific RES.

The Utrecht Province also published an Energy Agenda (Energieagenda) in which the focus is on the entire province of Utrecht. The Province aims to speed up the energy transition by getting actively involved in providing knowledge, contacts and finances (Provincie Utrecht, 2016). Two of their main focus points are reducing loss of energy in (mostly) the built environment, and secondly producing sustainable energy. An interesting topic that is also pointed out in the Energy Agenda is the possibility for job creation. In different levels of government the possibility of the energy transition in creating jobs is put forward as one of the aims as well.

Municipal level

The general idea of the 'local approach' towards the energy transition is that the municipalities are the directors. In this they are urged to work together with all sorts of other parties, like real estate owners, inhabitants, network operators, etc. (RVO, n.d. A). The municipalities are however obliged to design a transition vision Heat (transitievisie warmte) as stated in the Climate Agreement (klimaatakkoord, 2019). These transition visions heat have to include a realistic time-line indicating when neighbourhoods will abolish the use of natural gas. Secondly, the transition vision heat describes the potential alternatives for energy infrastructures and provision.

It is then up to the municipality to decide on an implementation plan (uitvoeringsplan). The implementation plan is a formal document that needs to be voted on by the city council (gemeente raad) and can therefore be objected to by parties affected by the implementation plan, as emphasised by respondent D. This plan holds the decision of the municipality on the implementation at neighbourhood level and the alternative energy infrastructure for each neighbourhood (burgemeester en wethouders, 2019). This implementation plan is meant to provide a framework in which individual parties have to make their investment decisions.

In Utrecht the municipality published an Energy plan. This plan is based on conversations held with, by means of a random draw selected, inhabitants of Utrecht (Gemeente Utrecht, 2015). In this Energy plan the municipality provides an overview of the current situation concerning energy

provision in the municipality. Besides, they describe the goals they set concerning the energy transition. An important notion that is made in this energy plan is that the municipality describes an intensive cooperation with and alignment between parties in Utrecht as a crucial part of their plan (Gemeente Utrecht, 2015).

There are several arenas at the municipal level that are involved in the energy-transition in Utrecht in general. More specifically focussing on the task of abolishing natural gas, there are two arenas which require special attention. The first one is the 'Regietafel' where the (investment) decision making power concerning Overvecht-Noord was vested during the early stages of the process. The second arena is the so called city-team which focusses on the city of Utrecht, of which Overvecht-Noord is also a part and therefore also includes issues concerning Overvecht-Noord even though their main focus is on the entire city, says respondent C.

Neighbourhood level

The energy transition needs to be dealt with at a local level due to case specific characteristics. But what exactly is 'the local level'? The national government appointed the municipalities to guide the energy transition. Therefore the municipalities decide on the transition vision heat and thus on a planning when each neighbourhood abolishes the use of natural gas. However, it appears that the case specific characteristics of an area can come down to differences per neighbourhood.

In Utrecht the municipality, as stated in their energy plan, focuses on intensive cooperation between parties in Utrecht. Currently the precise structures of how to shape these interactions, still have to be figured out. One way of exploring the possibilities is by creating a testing ground. A part of a neighbourhood in Utrecht called Overvecht-Noord is appointed as the first neighbourhood in Utrecht to abolish the use of natural gas. In order to do this, certain teams are invoked that focus on achieving this goal. On the level of the neighbourhood Overvecht-Noord a transition plan is created. This transition plan focuses on Overvecht-Noord specifically and mainly describes the steps that are to be taken in order to eventually come to a decision concerning how to abolish the use of natural gas in Overvecht-Noord. The main arena in which interactions concerning the transition plan take place is the 'programme team Overvecht-Noord natural gas free'.

On a different note there are also initiatives taking form in the neighbourhood that find their existence among the inhabitants of the neighbourhood themselves. By organising themselves the inhabitants of certain areas within Overvecht-Noord are determined to create a unified front in order to enforce more influence in the process. One of the ways in which they are trying to do this is by setting up a manifest which includes a set of criteria. These criteria reflect what the inhabitants find important and are presented as requirements that need to be met in order for them to cooperate in the process. In this sense the local initiative groups form both a combined arena where the separate initiatives interact with each other in a more informal way, as well as separate arenas where mainly the members of the initiative interact.

6.3 Overvecht-Noord local level arenas

The previous section described the different organisational levels to be distinguished in the energy transition from national- to neighbourhood level and introduced the arenas that are active. In this section the different arenas are elaborated upon further. This research has its main focus on the local, and more specifically, the neighbourhood level. Therefore in this section mainly the arenas that are positioned in these levels are described. The case study focuses on Overvecht-Noord, which is positioned in the municipality of Utrecht. In Utrecht there are several teams or groups that are working on the energy transition. Some of these teams have a specific focus on Overvecht-Noord and others overlap. This overlap is often associated with an overlap in different levels as well, since the developments in Overvecht-Noord also relate to developments on the level of the city of Utrecht. These developments might have consequences for other neighbourhoods and the sorts. Therefore some form of alignment and communication is desirable.

Even though the focus of this research is on the neighbourhood level, the higher levels cannot be completely ignored. Decisions, rules and guidelines provided on national, provincial, and municipal level will also apply to, and influence, the neighbourhood level. The focus of this research is illustrated in figure 6.3. The main focus is on Overvecht-Noord, however, the organisation concerning the decision making process has strong ties to the municipal level as well. This is elaborated upon further in this section. Because of this strong connection a part of the municipal level has to be taken into account as well. The larger part of the municipal level however, as well as the other higher levels, is considered as the context in which the process takes place. This context may influence the decision making process in Overvecht-Noord and the result of these influences can be reflected in the analysis.

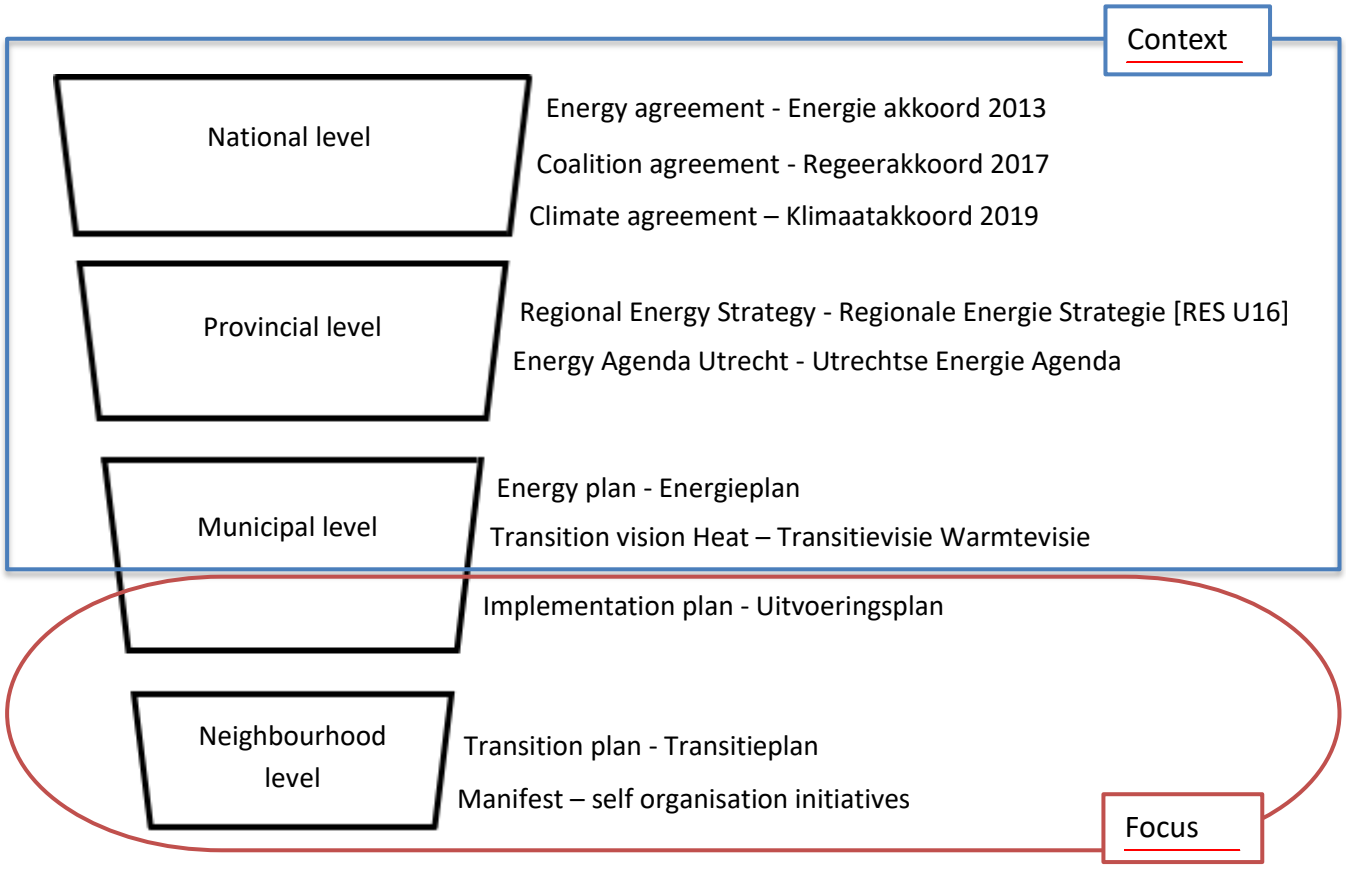

Figure 6.3: Research focus of organisational levels

Organisation Overvecht-Noord

Given the demarcation provided in the beginning of section 6.4, the next step is to make clear which teams are working on the decision making process in Overvecht-Noord. This section provides an overview of the different groups and arenas involved with the task and how they relate to one another. An illustration of the different arenas and their connection to one another is presented in figure 6.4.

At the municipality level in Utrecht a project team called ''Regietafel Energietransitie Utrecht'' is created, referred to as the Regietafel. This group has the aim to speed up the energy transition in the municipality of Utrecht. The Municipality initiated the Regietafel in order to create an arena that allows all different kind of stakeholders to come together and coordinate important decisions (Gemeente Utrecht et al., 2017a). The organisations that are part of the Regietafel are:

- Stedin – electricity network operator and operator of the gas infrastructure
- Energie-U – Energy cooperation
- Municipality of Utrecht
- Eneco – supplier of energy and heat, operator of heat network
- STUW – platform for housing associations Utrecht
    - Mitros
    - Portaal
    - Bo-Ex
    - (GroenWest)
    - (SSH)
    - (Habion)

Each of these 5 organisations appoints two people to represent them in the Regietafel. One of these two people is supposed to occupy the position of director and the other one the position of manager in the organisation they represent (Gemeente Utrecht et al., 2017a). Interesting aspect concerning the decision making power of the Regietafel is that the Regietafel in itself doesn't have any. Every party at the table has its own decision-making process and makes its own trade-offs (Gemeente Utrecht et al., 2017a). Their cooperation is meant to facilitate coordination concerning priorities, agenda setting, and of course to provide information and the possibility to learn.

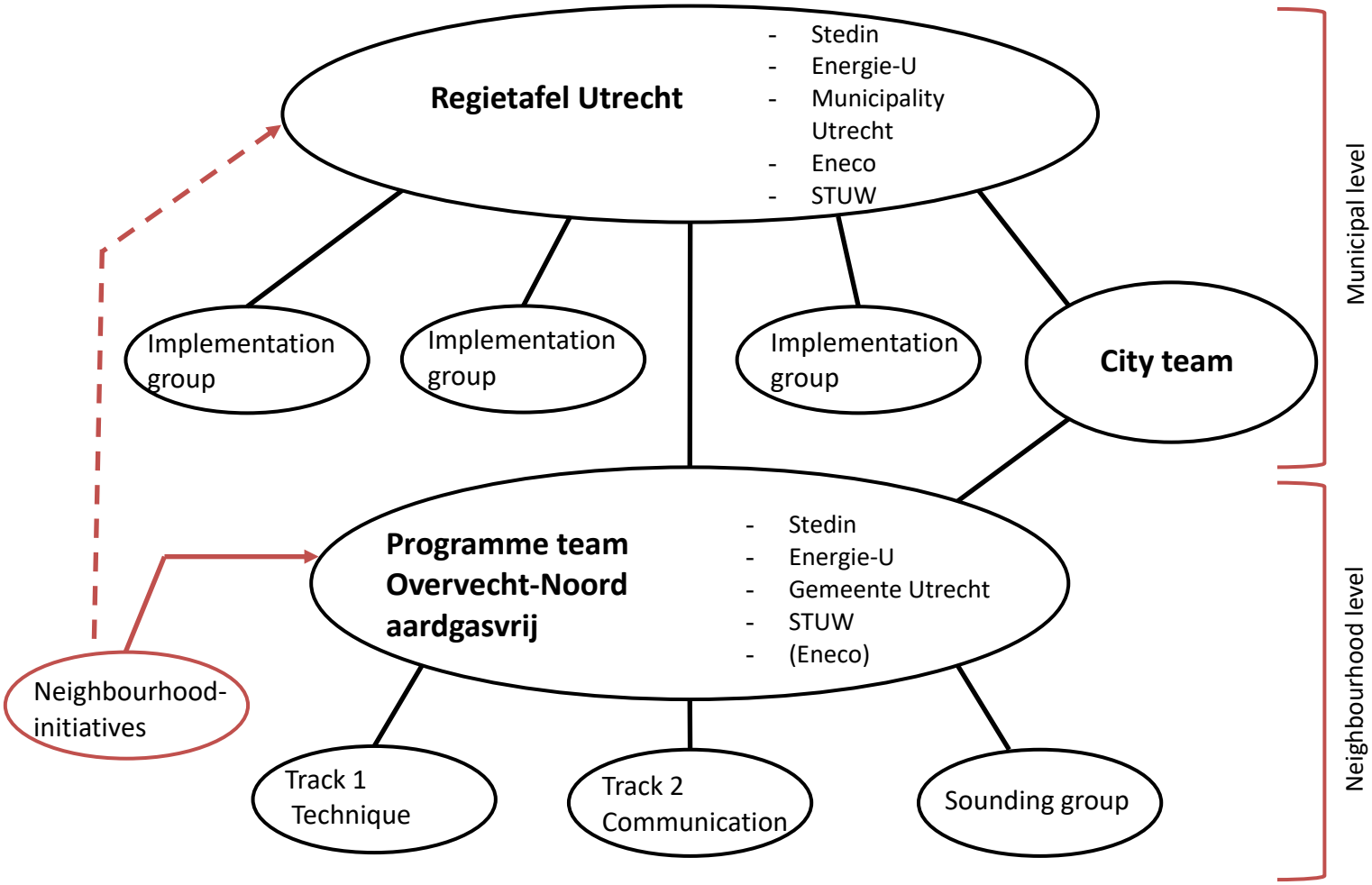

Figure6.4: Local level arena map

The Regietafel is the arena where the (final) decision making power is vested and carries the responsibility for the process in the end. Commissioned by the Regietafel there are several implementation groups that work on different projects (Gemeente Utrecht et al., 2017A). They eventually provide the Regietafel with the information required to succeed in the energy transition. One of these implementation groups is the "*programma team Oververcht-Noord aardgas vrij*" referred to in this report as the ''programme team''. This team operates on the neighbourhood level of Overvecht-noord and is tasked with the challenge of how to turn Overvecht-Noord into a natural gas free neighbourhood.

The programme team reflects the composition of the Regietafel to a great extent. Every party that is a member of the Regietafel also has a representative in the programme team, except for Eneco who, as respondent C. points out, have a somewhat more loosely collaboration with the programme team. C. explains that the energy company did provide input for the programme team in early stages of the process, but did not see added value in closed involvement in this arena. Additionally, when the process progressed and moved more and more towards decision making and deciding on how to come to alternatives, the energy company felt there was no longer a place for them in the programme team since they cannot have a say in a solution and also be the one to provide it (Gemeente Utrecht et al., 2017a). The members of the programme team are different people than the ones representing the organisations in the Regietafel. Where in the Regietafel the

representatives are directors and managers, the people in the programme team generally hold a function with less influential power in the organisation they represent.

The programme team also has two work groups that work on specific tasks concerning the abolishment of natural gas in Overvecht-Noord and provide information to the programme team. There are two tracks distinguished here; one track focusses on the technical aspects concerning possible alternatives for natural gas, and the other group is tasked with the communication to outsiders about what the programme team is doing and in which direction they are going, tells respondent F. He continues that the people working in these workgroups are different people from the ones in the programme team, however, in each group one of the members of the programme team is present as well in order to shorten the communication lines. The third group that provides input for the programme team is the sounding group, in which mostly contact with inhabitants of the neighbourhood takes place (Gemeente Utrecht et al., 2019). This is the main forum where the inhabitants can make their voices heard. The group exists of about 40 inhabitants that meet up with representatives of the programme team once every two months (Gemeente Utrecht et al., 2019). Even though there is no direct representation of the 'general' inhabitants in the programme team, via the sounding group their interests and concerns can still reach the programme team and this information can be considered as well.

Besides this formally organised structure of arenas that work on the abolishment of natural gas use in Overvecht-Noord there is also a different movement to be recognised. Where the previously described web of arenas is (mainly) initiated by the municipality of Utrecht, inhabitants of Overvecht-Noord want to have more of a say in the matter because the issue affects them a lot (Energievechtzoom, n.d.; Klopvaartaardgasvrij, 2019). Inhabitants of certain areas within Overvecht-Noord have started a bottom-up movement by organising themselves in the form of neighbourhood initiatives. Two of these initiatives are prominently visible: "nieuwe energie voor de vechtzoom'' and ''klopvaartbuurt aardgasvrij". These initiative groups both represent their own specific area within the neighbourhood, but they also collaborate in order to try to influence the process of the programme team (Klopvaartaardgasvrij, 2020).

6.4 Stakeholders

Decision making in a network setting gets complex because resources and power are divided over several stakeholders. Decisions made by one actor can influence the decisions made by an other actor. What are the interests that drive the stakeholders in Overvecht-Noord to invest in making the neighbourhood free of natural gas use?

Based on information obtained in relevant documents, (news) articles, websites of organisations, and indications derived from statements made during the interviews, a short description of the interests and responsibilities of the most important stakeholders concerned with the project Overvecht-Noord natural gas free is provided. The main interests and responsibilities per stakeholder is summarised in table 6.2. A short explanation of these interests and responsibilities is discussed per stakeholder in this section. The inhabitants of the neighbourhood are presented as one group in this section and a general indication is provided. Although interests and motivations can differ extremely between households it is opted to give a general indication (because it is impossible to provide a detailed overview of every household in the neighbourhood.) Also the three housing associations are presented as one in this Section. During the interviews it turned out that even though the individual housing associations do differ a little bit in opinion, in general they have the same interests, motivations, and responsibilities.

Table 6.2: Stakeholders interests and responsibilities

	Interests	**Responsibility**
Municipality of Utrecht	Climate neutral housing stock by 2050 Natural gas free Overvecht-Noord	Represents interest of inhabitants Formal decision making power
Eneco	Selling energy	Provision of sustainable heat/energy District heat network operator
Stedin	Durable gas- and electricity network Minimalizing investment costs	Providing and operating electricity- and gas network Minimalize social costs
Housing associations	CO_2-neutral dwellings	Provide sustainable affordable housing
Energie-U	Sustainable and responsible energy usage Inhabitants should have control over their own homes	Accountability towards their members
Inhabitants	Liveability of neighbourhood and homes Affordable solutions	

Municipality of Utrecht

The Municipality of Utrecht is the main initiator of the energy transition project in Utrecht. On the one hand the Municipality is instructed by the national government via the Climate Agreement to work towards a climate neutral housing stock in 2050, with special attention to abolishing the use of natural gas in the built environment (Klimaatakkoord, 2019). In addition, the largest parties in the Municipal Council are left wing parties, D66 and Groenlinks, that have climate aspirations on their political agenda, says respondent B. The Municipality signed a Covenant with the Ministry of the Interior and Kingdom Relations that binds the project in Overvecht-Noord as a testing ground for abolishing natural gas in existing neighbourhoods (Convenant grootschalige proeftuin met een aardgasvrije wijk, 2019). The alderman put a lot of effort in getting this project started, and in doing so the Municipality is very much invested in the Overvecht-Noord natural gas free project, emphasise the programme manager and a representative of the Municipality. This has a lot to do with signing the covenant as well, since it binds the Municipality to working on the goal of making Overvecht-Noord free of natural gas use.

The Municipal council is a government body that is elected by the inhabitants of Utrecht. In that sense the Municipality has an obligation to represent the inhabitants in the process, says respondent F. This could turn out to be complicated. On the one hand the Municipality has to represent the interest of the inhabitants. If the project turns out to affect the inhabitants negatively it might be better to find a solution that is not entirely natural gas free for example. However, on the other hand the Municipality is invested in the goal of turning Overvecht-Noord into a natural gas free neighbourhood. In such a way the tasks and responsibilities of the Municipality could be conflicting posing the Municipality for a dilemma.

The Municipality is responsible for most of the formal authorisation documents. The most important one being the implementation plan, which is comparable to a land use plan. The implementation plan could be seen as the formalisation of the decision on alternatives to natural gas. Although it is possible for stakeholders to formally object to the implementation plan, the Municipality holds a lot of formal power. This provides the Municipality the possibility to steer de decision making process towards certain alternatives. The Municipality can choose which roles she wants to play and how she wants to approach the task, varying from interfering as little as possible to a very hands on approach (Ebskamp & Verbraak, 2019). So far the Municipality of Utrecht chose for a participatory approach so that she can eventually decide on an implementation plan that both has the approval of stakeholders and their commitment so that they also see the plans through, says respondent D.

Eneco

A representative of Eneco provides some insight in the position of Eneco in the process. Eneco is an energy provider and the operator of the district heating network in Overvecht-Noord. In the energy transition their task is to provide sustainable energy production and their opportunity is to expand their client base. If the district heating network would be expanded this assignment is not automatically going to Eneco, explains respondent C. Generally this assignment would be assigned via a tender for which Eneco can apply.

Eneco is part of the Regietafel because they hold responsibilities as energy provider and network operator. Additionally, these arenas provide Eneco a platform to communicate with other

organisations, tells respondent C. This can be useful when they have to make physical changes to the built environment that affect people and organisations linked to it. Respondent C. explains that installing big installations for heat production requires a lot of interaction with the surroundings and platforms such as the Regietafel and the programme team provide Eneco the opportunity to communicate their intentions. Although Eneco is aware of the responsibilities they have concerning the energy transition, they remain in the first place a market player with the core business of selling energy.

Stedin

Stedin is the network operator of both the (natural) gas network and the electricity grid. The gas network in Overvecht-Noord is in need of replacement and with the prospect of abolishing natural gas use, replacing the network may not be a financially viable action. Removing or replacing the gas network would require 5 years of preparation and implementation, tells respondent F. The old gas network needs to be dealt with before 2024, therefore there is a lot of time pressure on the process for Stedin. A second interest in the Overvecht-Noord project for stedin is the electricity network. A lot of alternatives to natural gas would lead to an increase in electricity use, which requires a heavier electricity network. Respondent A. explains that Stedin has to strengthen the electricity grid but how much exactly is dependent on the alternatives that are implemented. Additionally, says A., Stedin perceives taking part in the process in Overvecht-Noord as an opportunity to learn what the transition would entail for them.

The core task of Stedin is to operate the gas- and electricity networks, explains respondent A. In this sense they have a responsibility to provide a network when there is demand for it. The end users of this network would be made accountable for the costs of the network, tell respondents A. and C. This means that society has to account for the financial burden of the networks. One of Stedin's intentions in the process is therefore to keep the social costs as low as possible. Stedin's contributions to the process, however, cannot go further than their own networks. They can of course contribute to the process itself, but as determined by the 'Wet onafhankelijk netbeheerder' it is not possible for them to invest in any other activities than operating the gas- and electricity networks.

Housing Associations

The housing associations in their core task provide affordable housing for low income households. The three housing associations in Overvecht-Noord together hold around 69% of the dwellings in the neighbourhood and therefore have a lot of influence in the process. The core task of the housing associations is regulated by law. The Housing Act stipulates that the housing associations can only invest in activities that have to do with social housing. In that sense, same as with Stedin, the housing associations can only invest in their own property.

Given that the main task of a housing association is to provide affordable housing to low income households, they are mostly concerned with the impact of the transition on the tenants. Respondent G. explains that the costs of the transition are an important topic for housing associations. A housing association cannot increase the rent simply because the dwellings no longer use natural gas. In order

to increase the rent it is required to make an improvement to the dwelling. Only then it will be possible for the housing associations to deflect some of the costs to the tenants. Therefore the housing associations don't see abolishing the use of natural gas as a goal in itself and the main focus is on achieving CO_2-neutrlaity, explains G. Ideally the improvements to the dwelling incorporate a lower energy bill so that the tenant despite an increase in rent doesn't pay more than they used to. A tricky aspect concerning renovations is that by law (Artikel 220 Burgerlijk Wetboek Boek 7) the association requires that at least 70% of the tenants approve the renovations in order to be able to carry them out. This puts pressure on the housing associations to negotiate a deal for making Overvecht-Noord natural gas free that convinces the tenants to approve of the renovation plans.

Energie-U

Energie-U is an energy cooperation that promotes a responsible way of dealing with energy. They try to do this in several ways, amongst which encouraging people and organisations to be more conscious about energy, gaining and spreading knowledge concerning sustainable energy, and even undertaking action to produce sustainable energy as well (Energie-U, n.d.). Energie-U is part of the Regietafel and the programme team in the first place to represent their members, who are inhabitants of Utrecht and generally have an interest in sustainable energy. Although the responsibility of the representatives of Energie-U in the first place is towards their members, they also have contact with non-members living in Overvecht-Noord, tells respondent E. According to respondent F. the position of Energie-U in the process can be difficult some times. On the one hand they are part of the Regietafel and the programme team, which means that they sometimes have to make concessions, but they also have to explain their decisions towards their members.

Energie-U has a focus on the inhabitants. They try to help the inhabitants by providing information and support when needed. The process in Overvecht-Noord focuses on making the neighbourhood free of natural gas, but an important goal for Energie-U is that inhabitants are able to have a say in this process as well, tells respondent E. In their view the residents should be granted the opportunity to influence the process and the decision.

Inhabitants

The inhabitants form a very diverse group of people with each different situations, interests, goals, and possibilities. Abolishing natural gas use means inevitably that dwellings will have to undergo renovations which can turn out to be rather costly. Money is a very important topic for the inhabitants. A lot of them are low income households and some are concerned with a land lease or other debts they have to pay (Mulder, 2019). This adds to the general notion that a lot of inhabitants don't feel comfortable with being told what to do and how much to invest in their own property to make Overvecht-Noord natural gas free a reality. They would much rather have a say in the matter instead of being told what to do. Some inhabitants took this seriously and started neighbourhood initiatives with the purpose of representing the inhabitants towards the Regietafel and programme team. In consultation with the inhabitants they made a set of requirements they present towards the programme team and by doing so they also try to create support in the neighbourhood to work towards a solution that suits them. The requirements these initiatives put together mostly concern the affordability, sustainability of the energy/heat source, sustainability of the energy/heat provision, impact and comfort concerning the solutions, and they want to have a choice (Nieuwe energie voor

de Vechtzoom, 2019; Klopvaartaardgasvrij, 2019). Therefore their interests are described in general terms as ‘’affordability’’ and ‘’liveability’’.

7. The process in Overvecht-Noord

This chapter presents a reconstruction of the case in Overvecht-Noord. By means of interviews with people (that have been) involved in the process and document review a storyline of the process is drafted. For the purpose of anonymity the people that joined in an interview are called ‘respondent A to G’ and are referred to as ‘he’ although not all respondents were men.

When taking a look at the Overvecht-Noord process there are 4 rounds to be distinguished. This is represented in figure 7.1. The first round is characterised by the initiation of the process and ends with the decision to focus on making Overvecht-Noord natural gas free. In the second round a newly initiated project team starts working on this task. During this time the project team mainly focuses on the demarcation of the project area, deciding on the precise goals they want to achieve, and gathering information and data concerning the task. The second round ends with the decision to put these activities to a hold and start communicating towards the inhabitants of the neighbourhood.

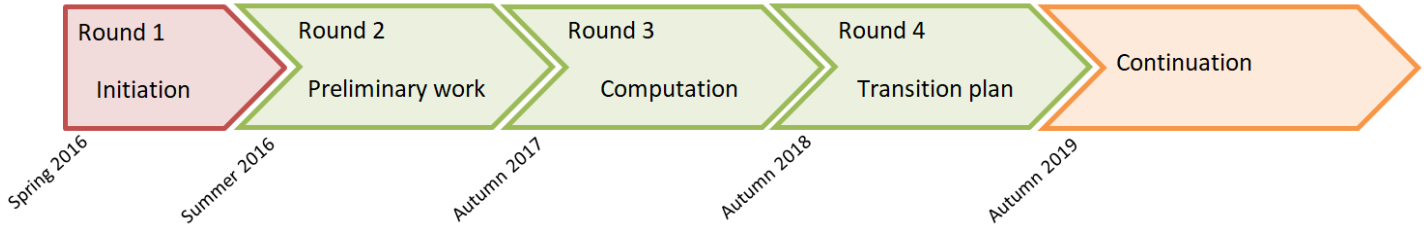

Figure 7.1: general timeline process Overvecht-Noord

The third round starts off with informing the inhabitants of the plans the project team and Regietafel made for the neighbourhood. The project team continues working towards the goals they set out in the previous round. During this time a lot of data is collected and they start conducting calculations concerning alternatives to natural gas. This led to an Infrastructural Footprint study and a first version of a transition plan. However, the Regietafel turned these plans down because it was not in line with their expectancies and intentions of creating a participatory approach and by doing so ends the third round. In the fourth round a newly appointed programme manager starts working with the now called programme team. In order to comply with the intentions of the Regietafel of creating a participatory approach, a plan of action that is supported by the involved stakeholders, the programme team takes a step back and starts focussing on the participation aspect of the transition. In doing so they work towards a transition plan that is approved by the Regietafel at the end of 2019, which entails the finalisation of round four. After round four a fifth round starts that did not yet develop very far at the time this research was conducted. This fifth round is therefore referred to as a continuation of the process, in which the programme team continues working, possibly in several other rounds, towards a final decision and implementation of the plans. An overview of the crucial decisions that define the starting and ending points of the rounds is provided in table 7.1. In the

sections in this chapter the rounds are discussed in more detail. The first five sections each describe one of the rounds. The sixth section provides an overview of the process and a link between the course of the process, the arenas, and the individual decisions of the stakeholders is made.

Table 7.1: Starting points and crucial decisions of the rounds

Round	Time	Starting point	Crucial decision
Initiation	Spring 2016 – Summer 2016	Commotion concerning the heat network and climate discussion	Decision to turn Overvecht-Noord into a natural gas free neighbourhood
Preliminary work	Summer 2016 – Autumn 2017	Installation of project team	Put a hold to gathering information and data and start communicating towards inhabitants
Computation	Autumn 2017 – Autumn 2018	Residents gathering, informing about the process	Rejection of transition plan
Transition plan	Autumn 2018 – Autumn 2019	Installation of newly appointed programme manager	Approval of the transition plan
Continuation	Autumn 2019 – ongoing	Preparation for redoing calculations	

7.1 Round 1: Initiation

Respondent E. explains about what in his perspective could be seen as a preamble to the task of turning Overvecht-Noord into a natural gas free neighbourhood. The topic of the energy transition was already discussed for a longer period of time in Utrecht, but in 2016 the discussion about heat provision was added as well. In Utrecht, and specifically Overvecht, there was a dispute between Eneco, the heat network operator, and residents of a high-rise apartment building due to enormous rise in costs caused by technical aspects within the building (DUIC, 2015). Due to the fuss concerning the heat network the topic of heat provision became more of a general discussion. According to E. it started to become more clear for everyone involved that district heating wasn't all about the technical aspects but rather is strongly intertwined with social aspects as well

Already in 2013 an Energy Agreement was established that pointed out the ambition to create an energy neutral built environment in 2050 (SER, 2016). In 2015 the energy transition plans got invigorated by the signing of the Paris Climate Agreement, creating an international obligation to make work of the energy transition. Developing along the way in 2016 the Energy report (Energierapport) was published by the national government. This report emphasised once more the ambitions in the built environment. However, the report also put more emphasis on the need to find alternatives to the use of natural gas in order to secure the safety of the inhabitants of Groningen (Ministerie van Economische Zaken, 2016a). Additionally, the Energy report indicated that the national government saw the municipalities fit to take a leading role in this transition (Ministerie van Economische Zaken, 2016a).

Encouraged by the energy goals imposed by the national government the Municipality of Utrecht started to take inventory concerning the energy transition. Due to experiences gained in the

discussions in Utrecht about the energy transition, it was acknowledged that this transition entails both technical and social challenges. Therefore the Municipality initiated the Regietafel in order to accelerate the energy transition and give room to challenge the social aspects as well (Gemeente Utrecht et al., 2017a). The Municipality started with exploratory conversations in the spring of 2016, leading to the first Regietafel meeting in June 2016 (Gemeente Utrecht et al., 2017a). As E. points out these exploratory conversations were meant to obtain insight in how the challenge of the energy transition in Utrecht needed to be tackled and which parties should be involved in that process. This exploration eventually led to a composition of the Regietafel in which housing associations, the Municipality, Eneco and Stedin as network operators, and energy cooperation Energie-U are represented. That the energy transition got so much attention in Utrecht is not that surprising for respondent B. He explains that not only the national energy objectives, but also the composition of the Municipal Council, with Groen Links and D66 as big parties, was probably an accelerating factor for energy topics. In that same light B. thinks that a cooperative approach displayed by the initiation of the Regietafel suits the image of the left-wing parties well.

7.1.1 Choosing Overvecht-Noord

The Regietafel was a whole new setting, tells E. This combination of people did not sit at the same table before, especially not concerning energy issues. They had to get to know each other first and think about what exactly they were going to do. The Municipality was faced with the task of executing the national goals concerning the energy transition in the built environment, including the reduction of the use of natural gas. Therefore rather early in the process the idea came to mind that a good first step would be to make Utrecht free of natural gas use.

In search of a suitable area to start this transition towards a natural gas free built environment the Regietafel was drawn towards the neighbourhood Overvecht-Noord. There were several reasons involved with the decision to start with this neighbourhood. Most of the dwellings in this area stem from the 60's and are in need of large-scale renovations (Gemeente Utrecht et al., 2017). Touching on that reason respondents B. and D. point out that a big amount of the dwellings in the neighbourhood are in the possession of housing associations. This was seen as a positive aspect because housing associations are perceived to be willing to cooperate, as respondents B. and D. indicate, and a portion of their possession was already scheduled for renovations explains respondent G.. A second reason to start with Overvecht-Noord was that the gas infrastructure was in need of replacement, which was certainly an urgent matter for Stedin who as operator of this network would have to invest substantially to replace the gas pipes. This investment would go to waste since the prospect is that the new gas network can very well become obsolete before 2050 whilst it has a lifespan of about 40 years (Gemeente Utrecht et al., 2017).The gas pipes in Overvecht-Noord have to be either removed or replaced before 2030 and it would require several years to perform that task as well (Gemeente Utrecht et al., 2017). Therefore it is decided that the plans for how to abolish natural gas use in Overvecht-Noord have to be ready at the latest in 2025, tells respondent B.

Another reason that played a role was that the Municipality wanted to invest in Overvecht-Noord as to develop and strengthen the neighbourhood (Gemeente Utrecht et al., 2017). The Municipality saw the opportunity to combine the natural gas free transition with the already ongoing project ''Samen

voor Overvecht". The Samen voor Overvecht project focusses on improving the quality of living in the neighbourhood, with ambitions like improving the quality of the dwellings, creating an inviting and clean outside area suitable for recreation, and creating (job) opportunities for the inhabitants (Gemeente Utrecht, n.d.). Both of these projects require large investments and if the streets have to be broken open to remove the gas network, it seemed logical to do all construction work at the same time, explains respondent B.

7.2 Round 2: Preliminary work

Although the core of the task was clear, that is making Overvecht-Noord free of natural gas use, there were still a lot of questions to think about. Respondent E. tells that this first period of the project team was characterised by getting to know each other. Since these parties did not interact with each other in this setting before, it was necessary to get to know each other's ways of thinking as well as the cultures of each organisation. It was also about getting the language straight, natural gas free what exactly does that mean?

The team had to figure out how to define the task of abolishing the use of natural gas, says E. Questions like 'should the gas network be removed entirely?' and 'what is the role of CO_2 reduction?' for example were things they had to sort out. The work document Overvecht-Noord free of natural gas (Werkdocument Overvecht-Noord aardgasvrij) sheds light on the path that the project team chose to take. They decided to focus on direct use of natural gas within the neighbourhood of Overvecht-Noord. This means the buildings should no longer use natural gas directly for cooking, heating and warm water (Gemeente Utrecht et al., 2017). An important distinction made in this goal is between direct and indirect use of natural gas. By focussing on direct use the possibility to use natural gas indirectly remains open, which means that natural gas used for the heat network is not part of the scope of the project team (Gemeente Utrecht et al., 2017). Even though the decision of the project team was to focus on direct use of natural gas, Eneco, as operator of the heat network, has the ambition to make the heat network sustainable (Gemeente Utrecht et al., 2017) but that is not considered a part of this process.

Another important topic the project team worked on was the demarcation of the project area and mapping what they were working with. Respondent E. tells that this process turned out to be not that simple. Several parties involved in the project team had information or data on the buildings in the project area. However, they used different systems to store their data which made it difficult to combine the information. The systems had to be made compatible to make sure the available information was efficiently used. This was quite a challenge because the data provided by Stedin, Eneco, and the housing associations was not generated for the purpose of providing insight in which energy systems are used by which household (Gemeente Utrecht et al., 2017). Additionally there was overlap in the data which meant that a way had to be found to prevent that cases were counted double, and they had to figure out how to deal with buildings in the area for which there was no information available. Eventually, with the use of the data an overview of the situation was created. It turned out that 55% of the dwellings in the neighbourhood only used natural gas for cooking (Gemeente Utrecht et al., 2017). For heating and warm water these dwellings did not rely on natural gas. The biggest challenge in Overvecht-Noord were the slightly over 2000 dwellings that still relied on natural gas for heating, cooking, and warm water because the adaptations required to make these dwellings free of natural gas are the most far stretching and therefore also the most costly.

Collecting data and making the data compatible was a lot of work, the project team could continue working out the details for a much longer period of time. However, the Regietafel was starting to put more pressure on the project team to progress the process, tells respondent E. The judgement by the Regietafel was that it was time to notify the inhabitants of Overvecht-Noord and start to involve them in the process. With this decision the end of the second round was announced. The findings obtained in this period were presented in the 'Work document Overvecht-Noord natural gas free' published in September 2017. This document gave a rather broad impression of which steps were intended to be made in order to make Overvecht-Noord free of natural gas use. It also included an outline of the project that in hindsight turned out to be somewhat optimistic. At this point it was intended to finish the transition plan and the transition vision heat in 2017 and the implementation could start in the beginning of 2018 (Gemeente Utrecht et al., 2017).

7.3 Round 3: Computation

Where round 2 ended with the decision to cease gathering information and start communicating towards the inhabitants of Overvecht-Noord, the third round virtually starts off with the first residents gathering. It was purposefully decided to start communicating towards the inhabitants as soon as possible, tells respondent E. It was the intention not to decide for the residents and then impose a certain solution on them, but rather to involve them in an early stage of the process. The plan was to inform them about what was going on and what the intentions of the Regietafel and the project team were, and eventually even to involve the inhabitants in the process in order to create a plan with them instead of for them.

There were good reasons to inform the inhabitants early in the process to let them know what was to be expected. In case people had to replace installations or were thinking about any form of alteration to their dwelling they could take into account that there were changes in gas use going to be made. However, as indicated by respondent F. the project team was not able to answer all, maybe not even most of the questions the residents had. That in itself respondent F. felt was understandable to a certain extent, however, in his view the fact that they were unable to present a clear picture of how the task would be approached and what the process of coming to a decision for an alternative was going to look like was more worrisome. Whereas the inhabitants wanted to obtain specific information the project team didn't have a project plan lined up yet and therefore was unable to show the inhabitants which steps the team was going to take.

Programme team/socio- technical aspects

After the preliminary work in round two was finished and a first understanding of what the process could entail was obtained, the Regietafel decided to appoint a programme manager who would have to lead the process. This occurred in the starting period of the third round, that is, the end of 2017. At this point a first version of the programme team was initiated and they started working on a plan how to move forward, tells respondent F. They had to make a plan on what exactly they were going to do, when, and with whom, adds respondent E. In doing so it was also the idea that the inhabitants should be more closely involved. There were two ways in which they wanted to achieve this. The first suggestion was to have a yearly gathering with inhabitants to inform them on the progress, and

secondly they initiated a sounding group. This sounding group was a place where people from the neighbourhood meet up with representatives of the programme team to discuss what the programme team was working on and provide an opportunity for the inhabitants to give feedback, tells respondent A. He adds that the inclusion of inhabitants was of added value because these people know the neighbourhood best and know what is going on, how a lot of people perceive the process, and which concerns and ideas play a role amongst the residents.

Having set up the programme team including the sounding group, the programme team continued working out the plan of approach. At the beginning of 2018, according to respondent E., the programme team decided to work towards a transition plan. This in itself was a logical step to take, given that the Regietafel would want to get an impression of what the programme team was working on as well. In the course of 2018 Stedin started to work on the Infrastructural Footprint study [IF-study] with the use of the data generated in Round 2 and additional data provided by the organisations in the programme team. Along the way Eneco joined in with this study as well, says respondent D. The IF-study is an instrument that provides an indication of the social costs per neighbourhood for alternatives to natural gas, as well as the amount of energy consumption and CO_2 reduction (Gemeente Utrecht et al., 2017). Based on this information the intention was to provide a preferred order of alternatives to heat provision from the perspective of social costs (Gemeente Utrecht et al., 2019). In the spring of 2018 Eneco used their expertise in energy systems to analyse all real estate in the neighbourhood and calculate which solutions would bring about the lowest average price per dwelling, explains respondent C. This basically led to a design for the neighbourhood, but other participants in the programme team as well as the inhabitants were not yet ready to think about alternatives to natural gas at this point, says C. Therefore this design was more or less put aside.

In working towards a transition plan the focus was mainly on techno-economic aspects, as respondent D. describes it. A lot of input in this period came from the IF-study made by Stedin and Eneco. In addition to that about 300 households and 9 owners' association complexes received an energy advice in 2018 (Gemeente Utrecht et al., 2019). These energy advices gave insight in what adaptations for each building type would be necessary when a certain alternative were to be implemented, explains respondent D. This information provided an indication of costs to the building owners, but was also a means to generate data the programme team could work with. Eventually the programme team presented a first version of the transition plan to the Regietafel, but the Regietafel was not satisfied with the results so far.

The Regietafel did not approve this first version of the transition plan, tells respondent D. He further explains that there were some complications concerning the results of the process so far. First of all the IF-study to a certain extent was based on confidential information that was not supposed to become public. This meant that non-disclosure agreements had to be signed and that the transparency of the process would take a hit. It would be difficult to persuade the inhabitants of the fairness of the outcomes of the research if they couldn't show what the calculations were based on. Secondly, the main outcome of the energy advices was that the required renovations would cost a lot of money.

The Regietafel seemed not that satisfied with the way the programme team was progressing. Respondent G. describes it as that there was a lot of attention paid to technical aspects and calculations, and too little to participation. With the knowledge that something else was expected

from the programme team it was decided that some changes and impulses were required. At the end of 2018 a new programme manager was installed. The Regietafel gave the new programme manager a main task: make a transition plan, says respondent F. The programme team had to make a plan to show what was about to happen in the coming period. From that point the programme team also started working in a more organised manner, with more responsibilities for the members of the team and monthly meetings, tells respondent C. Where basically all of the organisations represented in the programme team continued working under the new programme manager, Eneco decided to take more distance from the programme team. With the input Eneco provided up until this point they felt they didn't have much to offer the process any longer, explains C. They would still be available when they were needed, but they did not see the added value of committing fully to this process.

Organisational changes

During the course of the third round the newly named programme team continued working on a plan for making Overvecht-Noord free of natural gas. Along the way it became more and more clear that actions taken in Overvecht-Noord could affect other parts of the city, tells respondent C. The task of the Regietafel focused on the entire Municipality of Utrecht. Therefore it was decided that a different team should be initiated that would coordinate the entire city, of which Overvecht-Noord was a part. Around April 2018 the City Team was created that would account for the energy transition at the level of the city.

Another development during the course of 2018 happened separately from the Regietafel and programme team. When the programme team started communicating the intentions towards the inhabitants of Overvecht-Noord in November 2017, the first reaction was not a positive one. The Municipality thought that making Overvecht-Noord a testing ground would provide opportunities to invest in the neighbourhood while at the same time make it natural gas free, says respondent B. Where the Municipality saw an opportunity, the inhabitants, however, saw a burden. Respondent B. tells that this reaction of the inhabitants came from disbelieve; they couldn't understand why their neighbourhood should be the first one to abide to this transition, a neighbourhood with social problems, where most people have a relatively low income, and on top of that a lot of people have to deal with a land lease as well. This mismatch of expectations between the Regietafel and the inhabitants resulted in resistance of the latter, who started petitions against the plans. The main reaction of the Regietafel, and the alderman in particular, was that it should be ''doable and payable'' and there should be no increase in cost of living (Van den Berg & Huisman, 2020)

In some areas within Overvecht-Noord proactive residents started to organise themselves. The main examples were located in the Klopvaartbuurt and in the Vechtzoom. The Klopvaartbuurt didn't want to be part of the project and handed in a request signed by about 300 inhabitants to be left out of it (Mulder, 2019). However, these actions didn't lead to any desired changes. The residents of the Klopvaartbuurt didn't want to leave it at that and sent out surveys in order to check the opinion of the inhabitants. Eventually it turned out that the inhabitants were willing to cooperate with turning Overvecht-Noord into a natural gas free neighbourhood, as long as the circumstances were reasonable (Klopvaartaardgasvrij, 2019). Whereas at first the inhabitants were opposing the plans, along the way they realised they could also work along and try to bend the process in their favour. By bundling their voices in the form of ''neighbourhood initiatives'' the inhabitants of both

the Klopvaartbuurt and the Vechtzoom, as separate neighbourhood initiatives, try to make their voices heard and influence the process.

7.4 Round 4: Transition plan

The fourth round starts off at the very end of 2018 with the organisational changes initiated at the end of round 3. There is a new programme manager, there is the main task of providing a transition plan, and Eneco decided to put a little less effort in the programme team. The initial plan at this point was to link the outcomes of the IF-study to the outcomes of the energy advices and present the progress to the inhabitants, tells respondent D. This plan was cancelled, he continues, because a part of the IF-study was shielded by non-disclosure agreements and the indication of costs for inhabitants, both for renovation and in monthly fees, was so high that it was politically undesirable to communicate the outcomes. Instead of moving forward with the current findings the programme team decided to take a step back, gather some more information, and work on a transition plan with participation as a more central topic tells respondent D.

The first period of 2019 the programme team was discussing what the transition plan should entail, tells respondent G. He explains that this was necessary to achieve a sense of participation. Every organisation involved has its own interests and they needed to negotiate what they as a group found important and in which way that should be presented in the transition plan. G. adds that these negotiations were not really characterised by difficult conversations, but that it was mainly a lot of work. There was no pre-defined format they could use so they had to create their own way, he says. In the meantime, the Regietafel gave some feedback on the deliverables, they found the work so far decent but not yet good enough, tells respondent D.

After a while, around the end of May 2019, the Regietafel took a look at the work so far and came to the conclusion that the story the programme team created did not resemble what they were looking for, tells respondent D. The programme team took this as a setback and an atmosphere of disagreement was emerging. In respondent D.'s view, Stedin and the housing associations found the process to be complex and complicated, Eneco thought it should be more goal oriented, and the Municipality was actually quite positive although there was room for improvement. At this point a topic that had been discussed several times before came to the surface again. This was the topic of whether they wanted to achieve purely a natural gas free Overvecht-Noord, or whether they wanted a plan that would optimally support CO_2 reduction, explains respondent D.

D. points out that not all alternatives to natural gas also reduce CO_2 emissions. This would be contrary to the overall goal of the energy transition. In this sense it is mainly the housing associations and the Municipality that are opposing each other. The housing associations are more concerned with the affordability of the project, especially towards their tenants, says respondent F. He adds that the housing associations lean more towards CO_2 reduction, partly because this goal is determined on the national level. Respondent G. explains that a housing association in its core task has a responsibility towards its tenants. The housing associations find that abolishing the use of natural gas in itself does not necessarily benefit the tenants. G. states that reducing energy demand is the first and most important thing they should focus on. Therefore housing associations aim at insulating the dwellings as good as possible. However, if abolishing natural gas can contribute in their goal there shouldn't be a problem. Contrary, for the alderman making Overvecht-Noord free of natural gas use is a goal she obliged to, says respondent D. Therefore it was very difficult to let go of the idea of abolishing natural gas use in the neighbourhood.

Eventually it was decided that the main focus of the programme team was to make Overvecht-Noord free of natural gas use, but CO_2 emissions would be taken into account as a criterion, says respondent F. He continues that the housing associations decided that their main goal is to work towards CO_2-neutrality mainly by means of insulating, and that in Overvecht-Noord they comply with abolishing natural gas as well. The individual organisations of the programme team were working together to create the transition plan. They discussed with everyone within the team what this plan should entail. The plan is seen as a product they created together, says respondent A. Although respondent F. adds that a lot of effort from the programme manager was required to maintain progression. During central meetings it was discussed what the transition plan should entail, then the tasks were divided and everyone made a contribution in writing the plan, explains respondent A. These central meetings were necessary to create a sense of participation and support for the plan amongst the individual members of the programme team, tells respondent G. In that sense the transition plan describes the route the team will take to come to a decision in a gradual, thorough, and well substantiated way.

Respondent D. tells that in June they organised a workshop for the Regietafel in which they guided the members of the Regietafel through the process step by step. During this workshop a couple of agreements were made that provided the programme team an understanding of what was expected and provided the required input to continue working on the transition plan. In the beginning of September the transition plan was approved by the Regietafel and it was published in October 2019. This plan mainly describes the way in which the programme team is going to address the task of transforming Overvecht-Noord into a natural gas free neighbourhood.

Organisational changes

Also the fourth round brought about some organisational changes. When the transition plan was finalised Eneco felt that the process reached the point where they were going to work towards a decision for alternatives to natural gas. Respondent C. tells that Eneco had communicated earlier in the process that they did not want to participate in deciding on these alternatives, because they would like to be able to be the one to provide it as well. In the view of Eneco it would not be possible to first (partially) decide on the alternatives, and more specifically how to address potential energy providers, and then also want to be the energy provider themselves. That would create suspicion about the decision in the first place. The other organisations' representatives in the programme team were surprised that Eneco stepped out of the programme team. Respondent D. tells that Eneco even doubted whether they should put their logo on the transition plan. The other members of the team were not that pleased with the idea of Eneco retracting their logo. It would compromise the continuity in communication of the process towards the neighbourhood, D. explains. In order to prevent the team from having to explain why Eneco did not continue the process, they decided to add a section in the transition plan that points out that Eneco did contribute to the transition plan but wouldn't continue due to conflicting interests.

Another point of discussion that came up when finalising the transition plan concerned the Regietafel. D. tells that the issue was that the Regietafel was not considered to be the proper arena where the final decisions should be made. A major reason was that the housing associations were

not separately represented in the Regietafel, but rather by representatives from the Platform for Housing Associations Utrecht (STUW). The process was moving more towards the implementation phase and in the end every housing association would have to make its own decisions. In addition, in order for the process to work, commitment of every individual housing association would be required as well. Therefore it was decided that the housing associations should be individually represented in a steering group. The idea was that the Regietafel has a focus on the city of Utrecht, explains D. They decided that there should be a steering group purely with the focus on Overvecht-Noord where the investment decisions would be made. The steering group would also bring about shorter communication lines towards the programme team. For example, since every housing association would have its own representatives in the steering group it would be easier for the representatives of the housing associations in the programme team to make contact with their counterpart in the steering group because they work at the same organisation, explains respondent G. This new dynamic would create more possibilities for individual consultation in the background within organisations, adds respondent D. This was desirable because the programme team didn't want to repeat the situation in which they were working on a plan that would be turned down.

Neighbourhood initiatives

In the course of the fourth round the neighbourhood initiatives continued their work as well. Nieuwe Energie voor de Vechtzoom and Klopvaartbuurt aardgasvrij both focused on encouraging the conversation in their areas. They went from door to door to talk to the inhabitants about the project of abolishing natural gas use (klopvaartaardgasvrij, 2019). The inhabitants would like to have a say in the process as well, especially since it will affect their lives (klopvaartaardgasvrij, 2019). Based on the information they gathered in the neighbourhood both the Vechtzoom and the Klopvaartbuurt drafted a set of criteria that reflect the issues they find important. These criteria formed the basis for a manifest both initiatives separately drafted that stipulates under which requirements they are willing to participate in the process (Klopvaartaardgasvrij, 2019; Nieuwe energie voor de Vechtzoom, 2019). The manifest of Nieuwe energie voor de Vechtzoom for example incorporates three moments at which the inhabitants can vote on the plans; first they vote for the manifest itself, secondly for the chosen solutions, and thirdly for the offer that will eventually be presented to them (Nieuwe energie voor de Vechtzoom, 2019). The neighbourhood initiatives are helping each other out and bundle forces when presenting to the municipality and the programme team (Klopvaartaardgasvrij, 2020a). The programme team recognises the wish of the inhabitants to have a say in the process. The first arena that provides the inhabitants the possibility of making their voice heard is the sounding group. This sounding group is an initiative of the programme team and theoretically every inhabitant of the neighbourhood who is willing can participate in this group. This sounding group is meant as a means to obtain feedback on the plans of the programme team. The neighbourhood initiatives are independent initiatives that try to approach the transition from a different angle; a more bottom up approach. The standpoint the initiatives take has a more demanding character with their manifests and criteria. The programme team recognises the intentions of the initiatives as well as how much they have achieved in terms of support within the neighbourhood. Therefore the programme team at this point also intends to work together with the neighbourhood initiatives, according to respondent F.

7.5 Continuation

With the finalisation of the transition plan in round four the programme team has set out a plan of action that indicates the next steps they are going to make. They are going to work towards an implementation plan that entails a decision for alternatives and a plan for how to implement it, tells respondent B. The first step scheduled is to redo the calculations on alternatives for natural gas. Respondent D. explains they decided that this task should be outsourced in order to guarantee the credibility of the outcomes. The assignment they would present to these external organisations was drafted in consultation with all members of the programme team, says respondent A. Respondent G. adds that this provided the opportunity to make sure the assignment would reflect the interests of the individual organisations.

There were still a lot of aspects that weren't clear. One important aspect that stands out is that it is not entirely clear how eventually a decision will be made. In the end every organisation decides on what they will do individually. However, the intention is that this will not be an individual decision. Respondent A. explains that it is not so much that every organisation makes a decision for itself but that everyone gives his opinion. However, respondent A. adds, that for the end result to be effective everybody has to agree and commit to the chosen alternative(s). Also respondent G. thinks that a consensus will be required. Most alternatives have consequences on a large scale and require commitment of several organisations to make it happen. However, G. adds that every organisation will have to make a decision for itself as well. When looking at which parties hold which ownership rights it is clear that every organisation is very much dependent on the others. With this he is stressing the importance of coming to a joint decision.

Respondent F. tells that the decision making will occur stepwise. First the organisations in the steering group have to approve the plans. Then the Municipal council has to take it into consideration. According to F. the Municipal council will probably be very interested in how the process unfolded, was every stakeholder granted the opportunity to have a say and how does everyone feel about the plan in general? After that some amendments might have to be processed and then it is up to the Municipal council to make a final decision on the implementation plan. This implementation plan will then become a formal document, which means that stakeholders will be granted the opportunity to formally object to the plan as well says respondent D. The Municipality in that sense has an important, maybe even dominant, role to play in the decision making process. However, as D. points out, the Municipality would preferably want to decide on an implementation plan that is supported by the stakeholders and with the commitment from the organisations that they will indeed adhere to the plans. There is still a lot of uncertainty on how this will eventually play out tells respondent G. It appears there are no rules or agreements in place, or to be made in the future, that assure this commitment and therefore it seems it has to come down to trusting one another.

Another uncertainty in the process that is pointed out by several respondents concerns the financial aspect. In the remainder of the process it will become clear what the costs will exactly entail, but at this point this insight is not yet available. An important part of the financial aspect is of course also the question of 'who is going to pay', says respondent B. The uncertainties in the financial part are not only due to the lack of knowledge about costs, at the same time it is not yet clear what kind of financial aid there will be made available by for example the national government. B. continues by telling that the laws and regulations are possibly also changing over time. The process in Overvecht-

Noord entails a lot of uncertainties that are typical for a testing ground project. Currently the Municipality has limited authorisations to enforce the abolishment of natural gas. However, there are some shifts happening already. For example, since March 2020 the Municipality has the possibility on the basis of the 'crisis en herstelwet' to appoint areas where existing gas connections for cooking are no longer allowed (Rijkswaterstaat, n.d.a).

7.6 Overview Rounds

In the previous sections a recreation of the process of turning Overvecht-Noord into a natural gas free neighbourhood is presented. This section finalises the chapter by providing an overview of the bigger picture while taking into account the arenas, the individual stakeholders, and the individual decision they made. The process is divided into four rounds, each round ends with a crucial decision as described in the introduction of this chapter (table 7.1). The progress of the process is, according to the rounds model, a result of the interaction between the individual decisions made by the actors involved. A graphical overview of the most important individual decisions is given for each round in figure 7.2, this representation is based on the visualisation of the concept of the rounds model by Teisman (2000, p. 945). The figure focusses on the decisions made by individual organisation in each round. Therefore the programme team is not represented as such, but rather the participants as individual organisations. Decisions made by the programme team can be seen as coalition decisions by the individual organisations. Decisions made in coalition form are outlined by white squares. Even though the Regietafel can be seen as an arena, and coalition of the individual organisations, in this figure it is presented as one organisation. This is for purposes of clarity. The decisions made by the Regietafel within the scope of this research that influenced the decision making process can all be considered as coalition decisions and therefore, for the purpose of clarity, the Regietafel can be represented as one.

Process of trial and error

A lot has happened in the period from spring 2016 till autumn 2019. The process started off with a social discussion on the energy transition leading to the Municipality undertaking action to tackle the challenge. Stedin, Energie-U, Eneco, and STUW decided to join the Municipality in this task and work together to achieve the by the national government imposed energy transition goals. Abolishing the use of natural gas in the neighbourhood Overvecht-Noord was a decision made within a couple of months, and so the process in Overvecht-Noord started.

The setting was completely new to a lot of organisations at the table. The programme team needed to invest time to get acquainted and sort out what goals they were exactly working on. Also the project itself was completely new, it had not been done before at this scale and there were no blue prints on how to approach it. Along the way the team gained more knowledge and insights, which led to organisational changes and different approaches.

The first two rounds the then called project team operated with a somewhat pragmatic approach in the view of respondent D. There was a lot of focus on data gathering and executing computational work to get insight in the technical and financial part of the process. These computations were mainly driven by Stedin and Eneco, who as described by respondents D, B, and F generally prefer a more hands on approach. This situation also shows that the organisations were not used to working on such a participation project. Stedin for example, tells respondent F., has a main function of operating energy infrastructures which mainly entails technical actions. Setting out a cooperative approach for a neighbourhood requires a different skillset. Also for Eneco a participatory approach is

somewhat different than they are used to, says respondent E., because they usually work on commission. A first transition plan the project team created was turned down by the Regietafel in the autumn of 2018. This was partly due to the lack of participatory elements.

Discussion

During the first rounds the project team also discussed the focus and goals of the process. One of the topics kept returning throughout the process, namely whether they wanted to create a plan to make Overvecht-Noord natural gas free or a plan that maximally contributes to CO_2-reduction. Concerning this topic the interests of individual organisations played an important role. It was mainly the Municipality and the housing associations that were opposing each other. The Municipality was bound to the goal of natural gas free due to signing a covenant. The housing associations on the other hand are responsible for providing social housing, which means the financial picture is an important aspect to them. When looking at the long term, says respondent G., natural gas free per se is not necessarily the best option for a housing association. Renovations in social housing require demonstrable and direct improvements to the dwellings in order to be able to increase the rent. Switching to an alternative energy source does not necessarily mean that the energy bill decreases. Looking at the longer term, the national goals are to reduce CO_2 emissions and work towards a climate neutral housing stock. If housing associations, and any building owner for that matter, would invest in the short run purely in natural gas free, they might have to invest a second time to move to climate neutral. This is a clear example of how individual interests drive certain organisations to lean towards certain decisions. The goal of the process in Overvecht-Noord has been natural gas free from the beginning, and this goal was also decided upon in the transition plan. However, this is of course not a final decision, explains respondent G. The housing associations agreed to work on natural gas free within Overvecht-Noord, for which the transition plan is the roadmap how to work towards that goal. It has to be taken into account that a final decision still has to be made at the end of that road and given the core interests of a housing association the issues of CO_2 reduction and improvements to their dwellings can most likely be seen as requirements for them to be able to agree on and comply with a final decision. In that sense this discussion thus far led to a more loose agreement, and could possibly surface again later in the process.

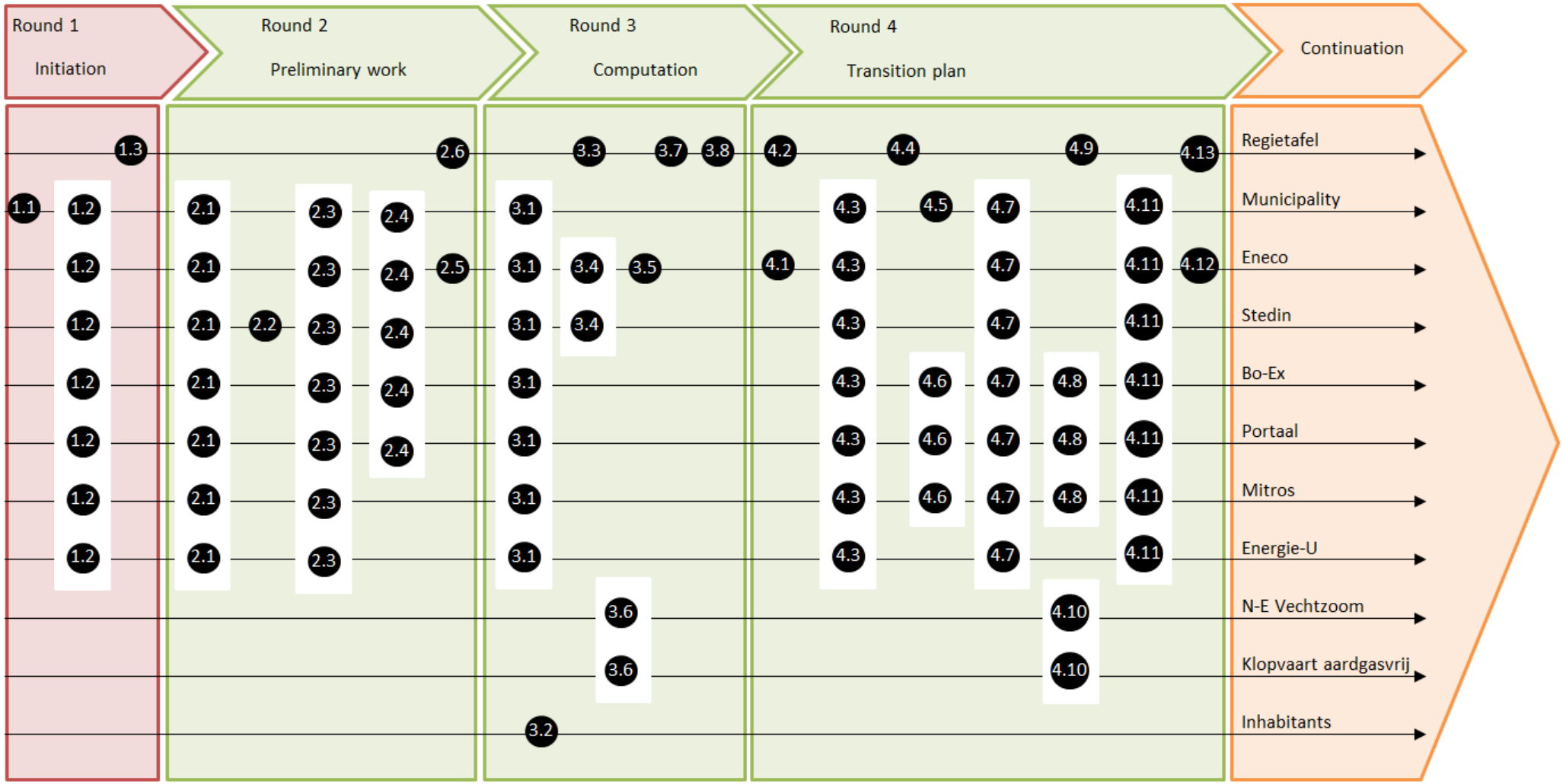

Figure 7.2: Rounds and individual decisions

1.1 Municipality initiates Regietafel
1.2 The invited parties decide to join the Regietafel
1.3 Decision Overvecht-Noord natural gas free

2.1 Agreement to form project team
2.2 Pressure deadline due to replacement of gas network
2.3 Project team decides to focus on direct use natural gas
2.4 Sharing data
2.5 Ambition for sustainable energy source heat network
2.6 Decision to stop collecting data and make contact with inhabitants

3.1 Communication towards inhabitants
3.2 Petition against the plans
3.3 Decision to stick to the original plan
3.4 IF-study
3.5 Eneco makes design for neighbourhood
3.6 Neighbourhood initiatives emerge and they bundle voices
3.7 Transition plan rejected
3.8 New programme manager

4.1 Eneco puts less effort in programme team
4.2 Undesirable to communicate outcomes
4.3 take step back, focus on participation
4.4 Transition plan rejected
4.5 Housing associations desired focus on CO_2 reduction
4.6 Municipality holds on tight to natural gas free
4.7 Main goal remains natural gas free
4.8 Housing associations' main goal CO_2 reduction, in Overvecht-Noord they commit to natural gas free
4.9 Approval transition plan
4.10 Neighbourhood initiatives draft manifests
4.11 Decision to cooperate with neighbourhood initiatives
4.12 Eneco leaves programme team
4.13 Regietafel replaced by Steering group

Communication

The process is characterised by learning along the way. The bigger part of the process for the programme team was about finding out what they wanted to do and how they would have to accomplish that. A couple of attempts were made with the IF-study and several versions of a transition plan. With the introduction of a new programme manager at the end of 2018 the team took a couple of steps back, from working on solutions to working on a plan of approach for working on solutions. They decided to let go of calculations for a moment and think about how to shape the process in such a way that it would yield an outcome that is supported by everyone involved. In 2019 the main focus was on writing that transition plan, but despite organisational changes the plan was rejected in the spring of 2019. An elaborate workshop provided by the programme team for the Regietafel, in which they worked through the entire plan step by step, was required to get everyone on the same page and get clear what the transition plan exactly should be.

Throughout the process the communication between the programme team and the Regietafel hadn't always been clear according to respondents A., F., and G. This situation is described by F. as that the programme team and Regietafel were waiting on each other. According to F. the programme team expected the Regietafel to have a specific idea and the programme team expected the Regietafel to communicate that to the programme team. However, he adds, the Regietafel turned out to be waiting on the programme team to come up with a direction. The programme team would hand in something and the Regietafel would either approve or reject it and return a follow up assignment for the programme team, tells G. This was not a constructive way of working and led to time loss for the programme team. Respondents A., F., and G. all point out that in hindsight it would have been better to have a shorter line of communication between the two groups. Eventually, after the finalisation of the transition plan the Regietafel was replaced by a steering group. In the situation with the steering group the lines of communication are shorter, which means that there are more possibilities for consultation throughout the process and therefore more support in the steering group early in a process for what the programme team is working on, says G.

Organisational changes

During the process there are some changes in the arena setting to be observed, an overview is provided in table 7.2. The Regietafel and programme team have actually been present almost throughout the entire process. Although there have been a lot of personnel changes along the way, the only difference in participating organisations is that Eneco (temporarily) stepped out of the Overvecht-Noord process at the end of 2019. The changes that occurred in these arenas mostly concern their functioning. The Regietafel handed over their tasks to the steering group. Where the Regietafel has a much broader focus on the energy transition in Utrecht, the steering group has only to deal with the Overvecht-Noord process. The programme team started off as the project team. Respondent C. describes the difference in the two arenas as that in the programme team all organisations are actively working together on the project whereas in the project team most organisations played a more informative role.

Table 7.2: Arenas over time

Arena	Active	Change	Nature of the change
Regietafel	2016 - 2019	Task concerning Overvecht-Noord handed over to the steering group in 2020	Eneco stepped out Each individual housing association has representatives Specific focus on Overvecht-Noord
Steering group	2020 - present	Initiated at the start of 2020 Remained the same	
Project team	2016 - 2017	Turned into programme team	Composition remained the same, Different way of working Eneco was less involved
Programme team	2017 - present	Change in programme manager - 2018 Eneco stepped out - 2019	Personnel changes - different programme manager with different experience Changes in representatives along the way Eneco is no longer a part of this arena since October 2019 Inhabitants' representatives were no longer a part of this arena since spring 2019
Sounding group	2017 - present	Remained the same	
Neighbourhood initiatives	2017/18 - present	Remained the same	They grew in support over time

Halfway through the process the neighbourhood initiatives emerged, bringing a new arena into the playing field. Starting these initiatives finds its motivation in the desire of some inhabitants to exercise more influence in the process. Starting in autumn 2016 there were representatives of the inhabitants of the neighbourhood directly involved in the programme team, lets respondent H. know (personal correspondence). In the spring of 2019 it was decided that these representatives would no longer be a part of the programme team. It was difficult to incorporate these representatives in the process tells respondent B. There is a difficulty in that the neighbourhood is made up of a very diverse set of people, which makes it a very complex group to represent. The representatives for the inhabitants should really represent the inhabitants, not only themselves specifically. Respondent F. adds to this that it became rather complex due to the different roles the inhabitants' representatives played, joined with possibly different motivations and interests as well. For respondent G. the representation of inhabitants in the group also didn't work out that well. For him it felt like a mismatch in expectations, where the process was working more towards a shared progression and in that focussing on the process itself, the inhabitants' representatives seemed more interested in actual solutions. This mismatch in interests hampered progression in either way. Also the alderman was having difficulties with direct representation of the inhabitants in the process, tells F. The Alderman has an obligation towards all inhabitants of Utrecht as well as an obligation towards the municipal council, which in turn is democratically chosen by the inhabitants of Utrecht. It was decided that direct representation of the inhabitants was not the best way, preference was given to a sounding group with an advisory role. This sounding group started in 2017 and meets up about every two months to evaluate substantive and current topics (Gemeente Utrecht et al., 2019).

However, some inhabitants still wanted to exercise influence over what was going to happen to their neighbourhood. Without any direct representation in the programme team they were forced to try to exercise this influence via different arenas. The sounding group is one arena that allows for little influence, and by combining the voices of the neighbourhood initiatives a new strong arena was created that allowed for communication with the programme team. By drafting manifests and presenting a unified front the neighbourhood initiatives showed that they are to be taken serious and the programme team decided to work together with the initiatives in the continuation of the process.

8. Overvecht-Noord in view of process management

In this chapter the decision making process in Overvecht-Noord as described in chapter 7 is placed into the analytical framework of process management, as introduced in chapter 5. It is discussed how the process in Overvecht-Noord relates to the elements of process management. An overview of this comparison is provided in table 8.1. This table lists the indicators of the framework as defined in chapter 5 and the observations of the process in Overvecht-Noord that relate to these indicators. The first section of this chapter discusses the positioning of the Overvecht-Noord process in view of process management. How the Overvecht-Noord process relates to the four core elements of process management is discussed in more detail in the sections 2 to 5 of this chapter. Section 6 highlights obstacles, strengths, and weaknesses of the process as per personal interpretation of the respondents. The final section concludes this chapter by providing an overview of in which way the process in Overvecht-Noord relates to the analytical framework derived from process management.

8.1 Placing the process

This research focusses on the decision making process in Overvecht-Noord on how to abolish the use of natural gas from the neighbourhood. The scope that is used demarcates this process to the neighbourhood level and from the start of the process to the finalisation of the transition plan. There are two important consequences of this demarcation to be taken into account. The first one is that at the neighbourhood level there are two arenas that have played a crucial role, namely the programme team and the Regietafel. The programme team is the main arena where negotiations at a detailed level took place. This is the arena where the selected stakeholders worked out the transition plan. The other arena, the Regietafel, is the place where the investment decision making power is vested. The programme team works in assignment for the Regietafel, and therefore the programme team delivers input for the decisions that have to be made in the Regietafel. An illustration of this dynamic is shown in figure 8.1.

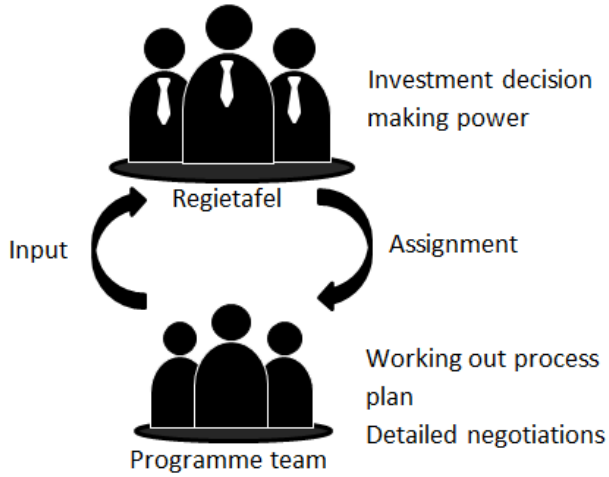

Figure 8.1: Dynamics main arenas

The second consequence that has to be taken into account is that the publication of the transition plan is not the finalisation of the entire decision making process in Overvecht-Noord. Even though this research does not look much further than October 2019 when the transition plan was published, the process is still ongoing. This idea is represented in figure 8.2.

Figure 8.2: relation research scope to process

The demarcation of the scope of this research has a start and a clear finish. This allows for the possibility to consider the piece of the process within the scope as a process in itself, a sub-process so to speak. However, at the same time this sub-process cannot be completely separated from the entire process, but rather has to be placed into the bigger picture as being an element of the entire process as well. In relation to process management this is specifically interesting when looking at the core of the sub-process and taking the substance of the transition plan into account. For the sake of clarity, the scope of this research (the sub-process) is referred to as 'the process' in the remainder of this chapter.

Process management basically defines two major parts of a (negotiation) process: pre-negotiations and substantive negotiations. The substantive negotiations entail the decision making that concerns finding a solution for the central topic of the process. The pre-negotiations on the other hand are more concerned with shaping the rules that apply to the process. The main result of the pre-negotiations is therefore a set of process agreements.

Looking at the reconstruction of the process in chapter 7 one would expect that the pre-negotiations took place in the first round. The process was initiated by the Municipality of Utrecht, who carried out exploratory conversations to gain the required information to decide on who should be invited into the process. An agreement for cooperation in the form of the Regietafel was decided on by the invited parties in the first round, which indicates that these parties had already taken some sort of commitment to the process. At the end of the first round the parties in the Regietafel decided to start with making Overvecht-Noord free of natural gas use and to initiate the programme team in order to work out that plan. The programme team would reflect the same parties as in the Regietafel. Given this structure it appears that the rules of the game should be accepted by the representatives in the Regietafel and given that these stakeholders were willing to provide representatives to work on the process there might have been some kind of agreements already made at this level on which they agreed to cooperate in the process. However, unfortunately for this research it was not possible to obtain inside information on the occurrences in the Regietafel. Therefore it is not clear to what extent agreements were made at this level that did not pass through the programme team.

Although it seems logical to assume that (some) process agreements would be made at the level of the Regietafel before starting off the process by initiating the programme team, it turned out that not everything was settled in the first round. In the case of Overvecht-Noord the central topic is abolishing the use of natural gas from the neighbourhood. In that sense it has to be concluded that the process eventually did not focus on the central topic of the entire process. At the start of the process the programme team was working goal oriented, meaning there was a focus on the central topic. This led to the Infrastructural Footprint study (IF-study) and a first version of a transition plan being turned down by the Regietafel. Along the way the programme team realised that in order to work out the issue of how to abolish the use of natural gas from the neighbourhood they had to come up with a plan that was supported by every party involved and that facilitated participation. Hence the focus shifted from the substantive topic to drafting a plan on how to shape the process that would lead to a decision. This notion was eventually embodied by the transition plan that was approved in October 2019.

The transition plan is mainly described by the respondents as a roadmap for how to address the issue. In the opinion of the representative of a housing association the transition plan does not entail

a decision of any kind for an alternative to natural gas. He actually describes the results thus far as setting the rules of the game for how to approach the remainder of the process, which he perceives to be very important. Furthermore the transition plan is a product of the programme team, approved by the Regietafel, and every participant of the programme team was able to have a say in it. The transition plan is therefore an agreed upon set of steps on how to continue with the decision making process. In this sense the transition plan can be seen as a set of process agreements, rendering the process that led to the transition plan to be defined as pre-negotiations. The fact that the programme team started off with a focus on the substantive topic indicates the struggle the involved stakeholders underwent to learn how to work together on the task. By means of interaction, negotiation, and trial and error they realised in order to be able to come to a decision they first had to agree on the road they would have to take to get there.

8.2 Openness

The openness of the process concerns the involvement of stakeholders in the process. It is of course crucial that all parties that need to be at the table, are at the table. Other important indicators for an open process concern favourable process agreements and the transparency of both the process design and the process management. An overview of the indicators of the analytical framework and observations in the process that relate to the openness of the process are presented in table 8.1.

Table 8.1: Analysis of the element openness

Openness		
	observations	**Indicators framework**
Party involvement	- Most of the important parties are represented. - Broad variety of stakeholders (Network operators, energy supplier, government, energy cooperation, housing associations) - The inhabitants are no longer directly represented in the programme team - No clear rules and agreements about joining - Thus far little support for others joining the programme team, but they are open to alternative constructions	- Broad representation of stakeholders in the process - Rules and agreements about joining - High acceptance of parties joining
Room for negotiation	- Interests of parties involved are considered and sometimes formalised in the transition plan - Transition plan product of collaboration and negotiation	- Interests of parties involved are considered during the process - No unilateral decision making

Agenda setting	- Agenda setting unclear - Eneco has no 'interest'in the agenda points - The goal/focus of the process and elements of transition plan are discussed and decided on together, by formalising it in the transition plan which is approved by the Regietafel	- Broad variety of actors proposed topics for the agenda - Topics for the agenda are discussed and decided on together
Transparency		
Decision making	- Deadline set for decision on implementation plan in (mid) 2020 - No clear rules defined and communicated - Every party has to make an individual decision, but in collaboration with the others - Municipal council takes formal decision (implementation plan) - Criteria defined for alternative heat solutions in assessment framework	- Deadline set for decision making upfront - Rules for decision making defined and communicated upfront - Criteria that guide decision making are set and communicated upfront or early in process
Process	- End goal: Overvecht-Noord natural gas free by 2030 - No clear rules and agreements - Deadlines possibly mostly set in the fourth round (not so much in earlier rounds)	- End goal clearly defined upfront - Rules communicated upfront (who, when and where) - Deadlines are clear to all stakeholders and set up front

Party involvement

In order to understand the party involvement it is necessary to look at the arena structure of the process in Overvecht-Noord. The dynamics of the most important arenas is represented in figure 8.3. There is the main structure of arenas, the Regietafel and the programme team, in which the municipality invited a select group of stakeholders. This select group exists of the Municipality themselves, housing associations, Stedin as network operator, Eneco as network operator and energy provider, and Energie-U as energy cooperation. This group is not a randomly selected set of stakeholders. In order to come to this composition the Municipality conducted exploratory conversations which eventually pointed them in this direction. By doing so the Municipality created a foundation in which the most important stakeholders would be represented.

With a complex issue as abolishing the use of natural gas where a lot of actors are involved it is of course questionable whether or not all relevant parties are represented. It has to be pointed out that this aspect is highly sensitive to subjectivity. Especially given that the process thus far does not provide with an outcome that allows to assess whether or not all relevant stakeholders were involved, makes that this aspect can mainly only be looked at from individual viewpoints and interpretations. Most of the respondents pointed out that they think that the current representation

in the programme team is the right one. A tricky point concerning party involvement is that not necessarily everyone has to be involved, but that every party that is vital to the process is involved. A very interesting group of stakeholders that is missing in the programme team is the inhabitants of the neighbourhood, however this does not mean they are not involved in the process at all.

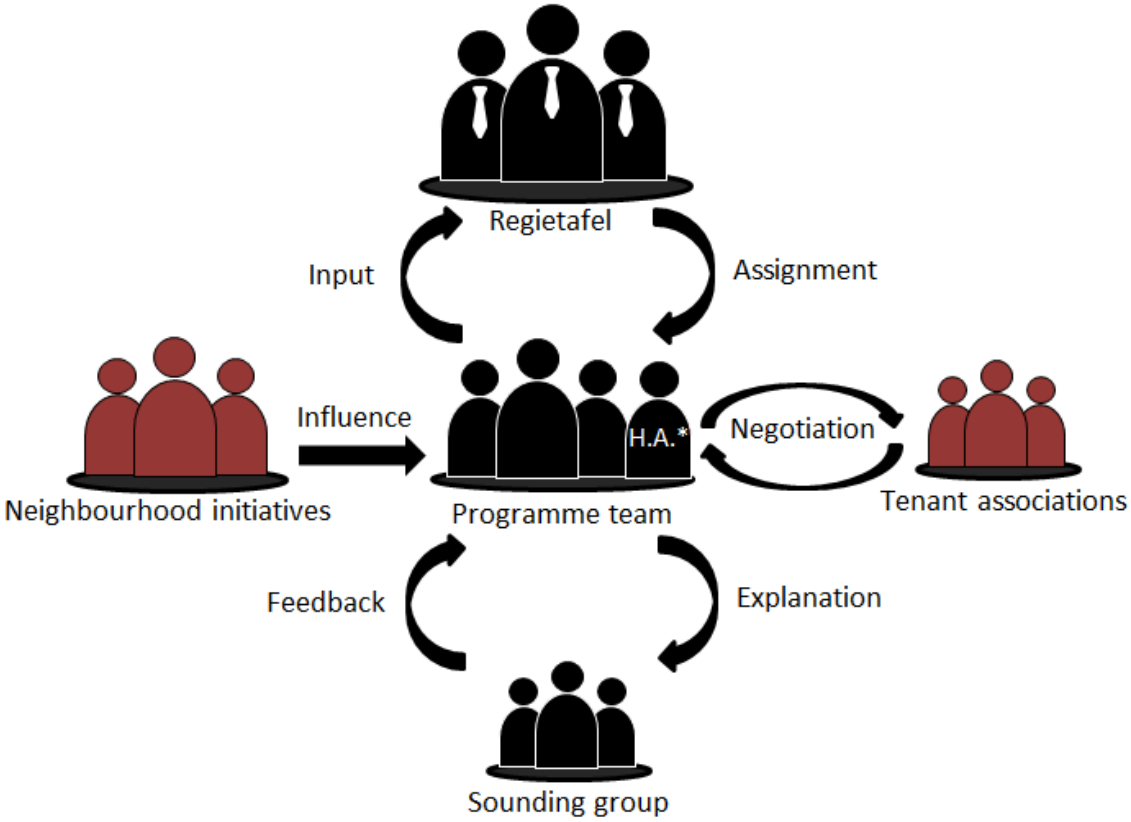

Figure 8.3: Dynamics of arena structure

*Housing associations negotiate with their tenant associations individually

A representative of the municipality for example points out that in his opinion all the relevant stakeholders are involved in the process, and specifically the programme team. As an elaboration on that statement he adds that the inhabitants, the owner-occupiers specifically, form a very challenging group to get on board. As discussed in chapter 7, there have been representatives for the inhabitants involved in the programme team. However, that didn't turn out to function as well as everyone would have liked and this representation was put to a halt in the spring of 2019. According to respondent B. one argument that was brought up by the Alderman to justify not having direct representation of inhabitants in the programme team was that it is also her job to represent all the inhabitants of Utrecht and they cannot only listen to one or two of them.

Owner-occupiers are not the only inhabitants of the neighbourhood. There are also tenants that have to be taken into account. This is a completely different group than the owner-occupiers. Owner-occupiers have to make a decision concerning their own property, whilst with rental property the landlord is mainly responsible for the costs of renovations but the tenants enjoy (most of) the benefits. On top of that, renovations in building complexes of 10 or more units require a reasonable offer, which is considered to be the case when at least 70% of the tenants agreed to it (Artikel 220

Burgerlijk Wetboek Boek 7). Housing associations are therefore always negotiating with their tenants in order to come to a proposal that at least 70% of the tenants would accept. A representative of a housing association thinks that at this point it isn't useful to involve the tenant association in the process of the programme team. He explains that the tenants are basically only concerned with their own homes, whilst the programme team works on the entire neighbourhood. The programme team is working with data and is concerned with big investments and the sorts, therefore he thinks that it wouldn't have much added value to involve the tenant association as well. In addition he points out that a housing association in its core business is supposed to provide for their tenants. Therefore he feels he is responsible to represent the tenants in the programme team himself as well. He does think, however, that maybe later in the process it could be of added value to involve the tenant association. At the point that there has to be created support for the plans and the issues involve specific building blocks the tenants very much have to be involved. The question remains whether the programme team would be the correct place, he adds.

The previously discussed responses mainly reflect on the participation in the programme team. However, although the programme team and Regietafel form crucial, and given the formal decision making power of the Municipality maybe even the most important, arenas, it doesn't mean that because certain actors are not involved in any of these arenas they are completely excluded from the process. Firstly, respondent E. pointed out that pretty early in the process it was already the intention of the Regietafel to involve the inhabitants in the process by means of information evenings. It was also decided to initiate a sounding group where inhabitants could provide feedback to the plans of the programme team. Secondly, as stated before, the representative of a housing association feels responsible for their tenants as well. Given that housing associations also have to discuss and even negotiate renovations with their tenants, the tenants can in a direct way influence the stance of the housing association in the programme team. Thirdly, the neighbourhood produced several neighbourhood initiatives that function as a medium for the inhabitants to influence the process. Especially since the programme team at the end of the fourth round decided to cooperate (more) with the neighbourhood initiatives there is a more than likely chance they can exercise more influence over the process. A representative of Energie-U indicates that in their opinion the involvement of the neighbourhood initiatives should be more 'formal' than merely cooperating. Energie-U would eventually like to see that the neighbourhood initiatives can take a seat in the steering group as representatives for the areas of the neighbourhood the initiatives cover.

In conclusion, it is very difficult to determine whether or not all necessary stakeholders are part of the process. The main structure of the Regietafel and the programme team is directly concerned with policy making for the abolishment of natural gas from Overvecht-Noord. The inhabitants, however, don't have a direct influence in these two arenas whilst without them it is very difficult to get anything done. If a home owner would simply refuse to comply with the plans it is not that easy to enforce them. On the other hand, some of the inhabitants made sure they could still be a part of the process by joining forces in neighbourhood initiatives. Especially now that the programme team decided to work together with these groups the door towards more involvement of the inhabitants is ajar. The future will have to show whether it will fully open.

Room for negotiation

Another indicator of an open process is that the parties involved are able to influence the process. There has to be room for negotiations so that the involved parties are able to affect the process. The transition plan, as being seen as process agreements, can give insight in whether or not the stakeholders were able to convey their interests.

It was decided in the Regietafel to start the process to abolish natural gas from the neighbourhood Overvecht-Noord. The main reasons, that are communicated, for this decision are that 1) the neighbourhood is relatively old and needs to be renovated, 2) a big part of the gas network is in dire need of replacement, and 3) it could be an opportunity to invest and strengthen the neighbourhood. The first reason is concern of the housing associations, this works in their advantage because they have some complexes on their agenda to renovate which makes it easier to incorporate energy changes as well. The second reason is mainly a concern for Stedin who would like to remove the network instead of replacing it when it can become obsolete in the short term. The third reason plays in the hand of the Municipality who tries to find possibilities of intertwining several goals. Although this seems to reflect the interests of several stakeholders it cannot with certainty be stated that they indeed had a lot of influence in this decision. As said before, for this research it wasn't possible to obtain inside information on what took place in the Regietafel.

At the level of the programme team the decision by the Regietafel to make Overvecht-Noord free of natural gas was leading. The Municipality signed a covenant with the Ministry of the Interior and Kingdom Relations binding them to the goal of abolishing the use of natural gas. In that sense it was close to impossible for the Municipality to let this goal out of the focus of the process. There has, however, been a lot of discussion concerning the goal of the process. Mainly the housing associations wanted to focus more on CO_2-neutral instead of natural gas free. Even though the goal of the process never changed, the desire of the housing associations to put more emphasis on CO_2-reduction was incorporated as a criterion. This clearly shows that even though the main goal of the process was set in stone other parties were still able to influence the details of the process.

Most stakeholders in the programme team were quite satisfied with the results of the process so far. A representative of the Municipality thought that given the circumstances the transition plan was probably the best they could get. The interests of the Municipality are represented to a great extent. One of their goals that doesn't show that much prospect is their goal to create more jobs, he says. Although they had job creation as one of their starting points, they do now realise that maybe the energy-transition does not provide enough possibilities to substantially meet that goal. The representative of Stedin is also positive about the transition plan. He thinks it is a good approach to come to a decision. Concerning Stedin it can be seen that the process was flexible towards them. At the start of the process the notion was that the gas infrastructure needed to be replaced before 2030. However, it turned out that some parts of the network needed to be replaced before 2024. To some extent this situation could be dealt with by transitioning certain dwellings that only use natural gas for cooking to an alternative, says respondent F. This short term issue puts a lot of pressure on Stedin who in their turn, according to respondent G., try to put more pressure on the process so that the issue can be dealt with before they have to replace the infrastructure. There is a sub-project going on that focuses on these dwellings that only use natural gas for cooking in an attempt to avoid

replacing the gas infrastructure, continues G. This indicates that Stedin did have the possibility to negotiate their interests and get the programme team to adapt to their needs.

Agenda setting

The agenda setting is a bit more complicated to determine. As pointed out by De Bruijn et al. (2010) allowing parties to put topics forward for the agenda makes that they have a reason to join the process. This can lead to an agenda with diverse topics. Looking at the agenda of the programme team, the focus is rather specific. Almost all topics are directly related to abolishing natural gas from the neighbourhood and they even demarcated their focus so specifically that even indirect use of natural gas is excluded. The only example of setting the agenda in the programme team is that CO_2-reduction got more emphasis after the housing associations started disputing the goal of the process.

On the other hand, given that all these organisations are part of the programme team indicates that they apparently have a reason to join the process, maybe even without adapting the agenda. The only party that does not feel there is added value in continuing with the process is Eneco. As a representative of Eneco points out there is nothing for them to decide on and they don't think there is a real use for them to be sitting at the table of the programme team. This situation could possibly be changed by allowing topics of importance to Eneco on the agenda and in this way creating an incentive for them to partake. However, based on the information available for this research there is no indication that Eneco would have wanted a specific topic on the agenda and the reasons of Eneco not to continue the process do not necessarily have to do with the agenda setting.

The decision making process in Overvecht-Noord is characterised by the main goal of abolishing the use of natural gas. This goal is most likely decided upon collectively in the Regietafel. Despite the fact that this goal was unlikely to change, there were possibilities to question and discuss it. Although the main goal didn't change, details of the process were very much up for discussion. The housing associations were able to give CO_2-reduction more emphasis in the transition plan, and the programme team responded to Stedin by starting a sub-project to accelerate the transition for houses that only use natural gas for cooking, because Stedin was faced with a shorter timespan for replacing a part of their infrastructure. This all shows that the interests of the parties involved were considered during the process. Some are even integrated in the transition plan which almost guarantees that they will be considered in the remainder of the process as well. This is very important, because it has to be taken into account that the transition plan includes mainly process agreements and not so much substantial decisions. Instead of deciding on issues straight away the programme team chose to incorporate them in the transition plan. By doing so the opportunity was created to deal with these issues later in the process when there is more substantial information to back up the negotiation. Additionally, the transition plan was drafted in collaboration and negotiation amongst the involved parties in the programme team. This plan was therefore more the result of negotiation than of unilateral decision making.

Transparency

The last indicator of openness concerns the transparency. Two aspects specifically should be transparent according to process management, namely the decision making, and the process itself.

Decision making

The final decision making takes place in the Regietafel. As stated earlier there is no information about the Regietafel available for this research, so this topic has to be addressed with the information available from the programme team. Some of the respondents indicated that it is not very clear how a decision will be made eventually. That does however not necessarily mean that the decision making is not transparent. It is clear that the Municipal council will have to approve an implementation plan. This implementation plan holds the decision of the municipality on the implementation at neighbourhood level and the alternative energy infrastructure for each neighbourhood. Therefore this plan to a great extent entails the decision of the process. Besides from knowing that the Municipality has to make a formal decision, it is also clear that every organisation has to make its own decision as well.

So far it is pretty transparent how the decision making is put together. The point where the respondents say that it is unclear how the decision making will play out is that the individual decisions are influenced by one another. Respondent A. points this out with an example that it is likely that if the housing associations choose a certain alternative, the surrounding inhabitants would probably have to comply to that alternative as well because of the impact of the housing associations even if the inhabitants actually wanted something else. Every party has its own interests and at this moment it is not clear what the impact will be for every individual stakeholder, says respondent G. This makes it unclear for now who will be able to influence or steer the decision making more than other parties.

There are no clear rules defined concerning the decision making, but some aspects are already known. From the beginning of the process it was clear that the deadline for making Overvecht-Noord free of natural gas was 2030. This would mean that at the latest five years before that Stedin would have to know whether to replace the gas network or remove it. This is also true for others as well. To have a natural gas free neighbourhood by 2030, the work has to start years before that in order to make it on time. The programme team drafted the transition plan which describes a step wise approach on how to come to a decision. It also states that it is expected that the Municipal council will make a decision in 2020 (Gemeente Utrecht et al., 2019). Although the transition plan gives an indication that a decision is expected to be made in 2020, it is also clear that in order to make the 2030 deadline a final decision has to be made at the latest at the end of 2024. Next to the transition plan the programme team also worked on an assessment framework that includes criteria on which the alternatives will be assessed. As a representative of a housing association puts it, the transition plan describes how they are going to approach the task, the criteria in the assessment framework represent their interests. These criteria are drawn up by some individuals in the programme team, but in consultation with the other organisations, says respondent A. In this sense the interests of the individual organisations are communicated and formalised, which gives a guideline and an impression of how the decision making will be formed.

Process

As stated before, the end goal of the process was clear from the start; Overvecht-Noord natural gas free by 2030. Whether there were deadlines set throughout the process is a bit less clear. Concerning the first three rounds of the process there is no information available on whether or not deadlines were set up front. For the fourth round the programme manager told that he did have a clear plan of

approach in mind and the programme team was set to work to this planning. Also respondent G. indicated that there were deadlines set in the fourth round.

Almost all respondents indicated that the process in general was, and still is, a search because these organisations don't have experience in a process like this and there are no blue prints on how to approach it. The programme manager went a bit more in detail concerning the structure of the process. He indicates that the participation is mainly based on trust. There are no clear agreements made on efforts or expectancies, and there isn't even a physical place appointed to the programme team where they can work. Based on this information it can be concluded that the transparency of the process is lacking and could possibly use improvement.

8.3 Core-values

The protection of core values is about not putting the participants of the process in a situation where they are no longer able to do what they in their core are supposed to. In order to make organisations feel safe and willing to join the process they not only not have to be put in these situations, but also have the feeling that they won't be. There is no indication of whether or not there are mechanisms or agreements in place with the purpose of protecting core values. Secondly, there are very few indications of issues that could have to do with the protection of core values. There are only two examples that concern core values to some extent identified.

The first example concerns the housing associations who, as stated earlier, wanted more focus on CO_2-reduction. As discussed in chapter 7 this wish related to their obligation to provide low income households with affordable housing, which is their core task. As indicated by a representative of one of the housing associations, simply abolishing the use of natural gas does not immediately lead to benefits for their tenants. It does not directly influence the liveability or affordability of the dwellings. It would however require quite some investments, that then no longer can be used for the liveability or affordability of the dwellings, and given that the longer term goals are to transition to a CO_2- or climate-neutral housing stock there would be a second investment coming. In this sense it can be argued that a focus solely on natural gas free can be conflicting with the core values of a housing association. As pointed out before the topic of CO_2-reduction was incorporated as a criterion in the assessment framework with which the alternatives to natural gas will be assessed. This means that it is almost guaranteed to become a part of the discussion and substantial decision making later in the process. This provides the opportunity to the housing associations to protect this core value later in the process. Additionally they also know that they have to make an individual decision in agreement with the other participants in the process. This means that to a great extent they will be able to protect this core value, especially since they own a majority of the dwellings in the neighbourhood which gives them more influence.

The second example where core values came into play is when Eneco decided to leave the process in Overvecht-Noord. As stated before, Eneco didn't feel like there was any use for them in the process since they don't really have to decide on anything. Additionally, as explained by a representative of Eneco, they no longer wanted to take part in the programme team because they felt they cannot be part of the decision for an alternative and then also be the one to provide it. They chose for the chance of providing the energy because selling energy is what Eneco in its core does. Apparently there was no convincing way that Eneco could stay in the process whilst maintaining the credibility as an independent energy provider.

A couple of things have to be taken into account about Eneco leaving the process. First of all, the representative of Eneco indicated that they temporarily left the process. They don't want to be a part of the part of the process where there is going to be made a decision concerning alternatives. Of course when something concerns the heat network they operate they are still open for providing information for example. When the process enters into the phase of execution and changes have to be made in the ground, where Eneco's heat network is positioned, Eneco has to be contacted again. The representative of Eneco points out that after a decision is made, they are probably open to re-joining the process in Overvecht-Noord. A second aspect that needs to be taken into account is that Eneco left the process in Overvecht-Noord. This means they are no longer part of the programme team and also not of the newly initiated steering group. They are, however, still a part of the Regietafel where they also focus on topics other than Overvecht-Noord.

Table 8.2: Analysis of the element protection of core values

Protection of core values		
Observations		**Indicators framework**
Protected core values	- No indication of agreements or mechanisms for protecting core values - Housing associations wanted focus on CO_2-reduction to comply to their core value of providing affordable housing - Eneco left the process so that they would be more credible as energy provider	- Indications of resistance or dissent
Exit rules	- It is possible to leave, but consequences unknown - There are no conditions defined concerning the circumstances under which one can leave or at which point in the process one can leave - Exit rules are most likely relevant and decided upon at the level of the Regietafel	- Possibility to leave the process - Conditions defined concerning circumstances under which one can leave - Conditions defined concerning at what point in the process one can leave

Another aspect of protecting core values comes into play with the Eneco example, namely exit rules. As shown by Eneco leaving the programme team, it is possible to leave the process. However, some respondents, amongst which the programme manager and the representative of Eneco, indicated that a lot of participants in the process were surprised and unhappy about Eneco leaving. This could be an indication that there are no clear exit rules formulated. The respondent of Eneco tells that they have communicated up front that from the moment the process is concerned with choosing an alternative they no longer want to be part of the process. Apparently they took it upon themselves to decide when they would leave and how they wanted to communicate this information. The (built) environment manager confirms that there are no agreements that an organisation cannot leave the process, but she adds that she is not really familiar with the rules of the Regietafel. Given the

structure where the programme team works in assignment for the Regietafel, it is likely to assume that matters such as exit rules would be dealt with at the level of the Regietafel. However, there is no information available on the occurrences in this arena. This analysis of the process concerning the protection of core values is summarised in an overview in table 8.2.

8.4 Progress

The process should progress according to schedule. The main deadline is that Overvecht-Noord should be natural gas free in 2030, but a general deadline like this makes it difficult to assess whether the process is currently progressing enough. Given that the process started in 2016 and therefore would have a runtime of 14 years in total, the question is whether it is worth it being 4 years into the process and having spent about 2,5 years on pre-negotiations. The opinions of the respondents about the progression of the process thus far are rather diverse. The (built) environment manager gives the impression that in her opinion it appears the process took longer than it should have had. A representative of a housing association indicates that the process was quite long, but he also says it has to be taken into account that there was a lot of work that needed to be done. The representative of Stedin adds that given the amount of time that was available to them to work on this process it is not surprising that it took as long as it did. Another argument that was used more often by the respondents is that it is a new process and they had to figure out everything along the way, which makes that it took somewhat longer.

There are also some that think the process doesn't progress enough at all. The representative of Eneco for example indicates that the programme team spends too much time on talking instead of dealing with the problem head on. The most disappointing sound came from respondent H., an active local resident, who spoke from the perspective of the neighbourhood and its residents. He stated that after two years the transition plan does not provide a perspective on 'payable and doable' heat solutions and that the inhabitants feel this aspect should have been presented already early in these two years (personal communication). An overview of the analysis concerning the progress of the process is provided in table 8.3.

Table 8.3: Analysis of the element progress

Progress		
	Observations	**Indicators**
Incentives for progress	- Short term gains not clear and/or present for all involved stakeholders - Sense of urgency seems to be missing with some stakeholders	- Gains for each party are clear - Parties encounter a sense of urgency
Heavy staffed	- Regietafel is heavily staffed - Programme team less heavily staffed - No indication there was a lot of delay due to consultation	- Delay due to consultation - Representatives have a position with relevant decision making power in the organisation they represent

Eliminating obstacles that slow the process down	- There were changes made to the structure of the process (Regietafel replaced with steering group) - Certain topics were postponed by integrating them in the transition plan or assessment framework - Structure of arenas allows for transferring conflicts to the periphery of the process (although unclear whether used that way)	- Alterations specifically made to overcome issues in the decision making process

Incentives for progress

The incentives for joining the process are pretty clear for most of the involved organisations. The main issue with these incentives is that they don't necessarily add up to the same timeline. The Municipality derives its incentive from the by the national government imposed goals of creating a climate neutral housing stock by 2050. Stedin is faced with high investments in the gas infrastructure that would have a low return on investment when this network becomes obsolete in the near future, which leads to high social costs. A part of the network has to be fixed before 2024, which means in order for Stedin to be able to organise something they have to know what is expected sooner rather than later. At the same time, as respondent F. points out, the inhabitants would like to have more time so that it won't be rushed into a decision for an alternative. This indicates that for some organisations the short term gains are present and clear, but for others it is not. This makes that a few, and in this case mainly Stedin, have an incentive to push the process forward whilst others feel they have all the time to delay. At the same time a sense of urgency seems to be missing. Of course for Stedin the matter of replacing or removing the gas network is quite urgent, but for other stakeholders the urgency seems not that strong. There are currently hardly any direct consequences for most of the involved parties. A respondent of Eneco pointed out that it might be possible that the lack of progression in the process could be due to a lack of effort by the involved organisations. This can be seen as an indication that the urgency is not pressing enough for some of the participants.

Heavy staffed

The representatives in the process should have a certain level of decision making authority so that decisions can be made quick and adequately and the negotiations run more smoothly. When looking at the Regietafel, every organisation should have two people representing them, one occupying the position of director and the other the position of manager in the organisation they represent (Gemeente Utrecht et al., 2017a). It is therefore expected that the representatives in the Regietafel most likely have enough decision making authority that consultation is not required often.

The decision making authority of the people representing their organisations in the programme team is somewhat different. First it has to be taken into account that the decisions made in the programme team are generally small. The most important decisions are made by the Regietafel. As illustrated with the transition plan. The programme team worked on this plan but the final decision was made by the Regietafel, which means that even if a representative in the

programme team would agree to something, it can still be turned down by his superior in the Regietafel. The fact that this actually happened indicates that there might not have been enough collaboration within the organisations to make sure the transition plan would meet the expectations of the Regietafel. There was very little response from the respondents concerning this topic. One response came from the representative of a housing association who indicated that he basically has full freedom to operate within the programme team. This is not the place where investment decisions are made he tells. He is basically the person who knows most about the substance of the process and he discusses the substance with some colleagues now and then. He also adds that for his organisation the goals are rather clearly defined. Therefore consultation is not that much necessary.

Eliminating obstacles that slow the process down

One obstacle that is pointed out a lot is that it concerns a testing ground and therefore they have to figure out along the way how they are supposed to address the task. This of course led to a sluggish process because a lot of time was used to work on things that eventually weren't used. An example is the Infrastructural Footprint study that was conducted in the third round. However, the issue of inexperience is very difficult to eliminate since the whole process is new. Even still, by learning along the way there were changes made that were meant to positively influence the progress of the process. For example, the Regietafel was replaced by the steering group in order to shorten the line of communication between the people working on the details of the process and the ones that are responsible for the final decision. Shorter lines of communication would enhance the level of agreement between the two arenas so that the chances of the steering group turning down deliverables of the programme team would decrease.

Another example of eliminating obstacles that slow down the process is that certain discussions on the substance of the process were delayed for a while. The discussion about natural gas versus CO_2-reduction can be seen as an example of this tactic. By agreeing to include CO_2-emmissions in the criteria of the assessment framework the discussion between abolishing natural gas or reducing CO_2-emmissions is postponed until later in the process.

An interesting aspect that De Bruijn et al. (2010) address in their book is that a useful strategy is to transfer conflicts to the periphery of the process. The information gathered for this research does not indicate that this has been the case, however the structure of arenas that is set up does allow for this possibility. As De Bruijn et al. describe this strategy is meant to keep conflicts away from the decision makers by letting task groups work them out. This way the decision makers are not obstructed by resentment due to conflicts. Seeing that the Regietafel assigned the programme team the task of working out the process it is likely that most of the conflicts are dealt with at the level of the programme team. The programme team in their turn had two task groups working on different issues, namely technical aspects and the other one on communication. This structure again would allow for working out certain conflicts in these task groups instead of having to deal with all of them in the programme team.

8.5 Substance

The final core element of process management concerns the substance of the process. A process without the correct substance will ultimately fail to reach its goals. The aspects of interest concern negotiated knowledge, an unbundling of experts and decision makers, and a broad consideration of options. The analysis of the element of substance is summarized in table 8.4.

Table 8.4: Analysis of the element substance

Substance		
	Observations	**Indicators**
Negotiated knowledge	- (New) calculations on alternatives to natural gas are done during the process, conform assessment criteria. - Assessment criteria drafted in consultation with the parties in the programme team - Transition plan incorporates these calculations as a basis knowledge input for decision making	- Authoritative information - Every party involved uses the same, decided upon, information - New amount of joint knowledge produced
Unbundling experts and decision makers	- Calculations on alternatives to natural gas are outsourced to two external organisations - There is an independent programme manager and (built) environment manager - The assignment for calculations, accompanied by an assessment framework, is drafted in consultation with the participants in the programme team	- Inclusion of external research groups or experts - Experts involved who are detangled from parties in programme team - Fields of expertise relate to energy transition - Assignments for research groups formulated by programme team
Variety of options considered	- A broad variety of options were a part of an initial assessment - Options that were excluded first but became more viable later could be included again if the process still allows for it - Transparent documentation concerning the consideration of alternatives	- All possible options have to be identified - These options should have been included in an initial assessment

Negotiated knowledge and Unbundling of experts and decision makers

The programme team started in the second round with combining the knowledge available by the individual participants. They first combined data sets to create a common understanding of the physical aspects of the project area. This did not only provide insight in the scope of the task, but also created a joint understanding of the issue at hand. In the third round Stedin and Eneco started working on the Infrastructural Footprint study (IF-study) based on combined information. However, as the programme manager explains, there was certain information used in the calculations that some organisations were not willing to give free. This negatively affected the transparency of the calculations. Additionally, the programme team also realised that the image of these calculations could be tainted, explain both the programme- and the (built) environment manger. Given that this IF-study was performed by two organisations who were members of the programme team at that time, it could easily be that people would distrust the results.

In order to deal with this situation the programme team decided that it was necessary to outsource the calculations concerning the alternatives to natural gas to two external organisations. In order to do this the programme team drafted an assessment framework. This framework was discussed amongst the participants and includes criteria that represent the interests of the parties involved. By outsourcing the calculations and negotiating the assessment criteria, new information is created during the process and this information is most likely to be accepted and used by the involved parties. Especially given that this part of the process is included in the transition plan indicates that all parties involved in the programmeteam/Regietafel agreed to using this information as a basis to come to a decision.

Another aspect where the unbundling of experts and decision makers takes place is found in the setup of the programme team. The Regietafel was initiated by the Municipality of Utrecht, but is considered to be more of a collective with equal partners, says a representative of the Municipality. In order to guide this process as a collective, instead of having one organisation take the lead, there are two external independent people contracted with funds made available by the involved organisations. This concerns the function of programme manager and the function of (built) environment manager.

Variety of options considered

Deciding to let go of the IF-study and redo the calculations allows for the possibility to consider more options in a transparent process. Selecting alternatives to take into account is a matter of narrowing down. The question is, how broad was the selection the programme team started with? There is no real answer available on how many and which alternatives exactly were considered. However, the respondents did give the indication that they at least considered a broad variety of alternatives even if some didn't seem logical. The representative of a housing association points out that there were no alternatives that were already not given the time of day in advance. However, he adds, if there are indications that certain alternatives are not a correct fit there shouldn't be put too much time and effort in them. As a representative of Stedin explains, some alternatives are not worth the time investigating simply because they are too expensive, or it is not yet available or possible to incorporate etc. The (built) environment manager confirms that not every alternative is included in the calculations. However, she adds that they will be transparent about the process by adding an

explanation on why certain alternatives were not included all the way through. This indicates that these alternatives were a part of an initial consideration.

Also when it would turn out along the way that a certain alternative has made a lot of progress and could be feasible to implement in Overvecht-Noord the respondents would be willing to take them in consideration again later in the process. This is something the inhabitants want for sure, says the (built) environment manager. The representative of a housing association and the one of Stedin also agree that such an alternative should be put back on the agenda, however, they both add that it has to be taken into account that this would only be logical or possible if the process did not progress too much already.

8.6 Obstacles, strengths and weaknesses

The process in Overvecht-Noord is characterised by a group of organisations that positioned themselves in a horizontal playing field. The idea behind this process, tells a representative of the Municipality, is about creating consensus and participation. The (built) environment manager emphasises that it is very important to get the inhabitants of the neighbourhood to join in, and also to give them that possibility. If for any reason the (majority) of the inhabitants decide not to go along with the chosen alternatives it is simply not going to happen she says. Currently there are no means available to force households to stop using natural gas and if that option would be available in the future it wouldn't be preferred to use it. Also the representative of a housing association acknowledges that it is important to create support among the inhabitants. As he explains, a neighbourhood approach is a different approach than the interaction between a housing association and their tenants. However, he also sees similarities. There has to be a good plan that is discussed and aligned with everyone involved before it can be implemented. Otherwise there can and probably will be a lot of resistance. One of the things that makes the process in Overvecht-Noord more complicated, according to a representative of Stedin, is that there are also a lot of private entities involved such as private landlords with a small amount of property and especially the owner-occupiers. He is also convinced it would be best to have the support of the inhabitants, but he also indicates that the financial picture is an important issue here. The representative of Stedin sees the benefits of involving these private entities. By providing the inhabitants the possibility to think along about alternatives they would get the feeling that the solution chosen at the end is also their solution. The representative of Energie-U is also in favour of consensus and especially involving the inhabitants more in the process. However, he also imposed the critical question what exactly the influence of the participants in the Regietafel is when the major decisions have to be formalised by the Municipal council?

The process in Overvecht-Noord is mainly based on trust, ambition, and willingness to collaborate. There is however very little formalization concerning this collaboration, says the programme manager. As programme manager it is his job to manage the process and without contractual agreements whether someone actually participates and puts in a lot of effort is up to trust. There is no way to enforce that people honour their commitments. The representative of Eneco confirms that the process is based on ambition and that participation is on a voluntary basis. In his opinion, without the proper steering these characteristics lead to a sluggish process. In that light the programme manager pointed out that Overvecht-Noord is a testing ground, which means that they are currently actually establishing the ways of doing things. He also adds that it wouldn't surprise him if this kind of project in this way will not be repeated in every neighbourhood in the Netherlands. Such a process takes up so much time and resources that it is just not feasible to do it this way everywhere.

Different approaches

The approach in Overvecht-Noord is but one of many possibilities. As a testing ground there are always multiple tings that could be better or different. As a representative of Eneco points out, there are certain areas in the Netherlands where the Municipality and the housing associations decide what they want to do together and move for an offer from market players. This is more easily done in such a context according to the representative of Eneco, because these are clear entities that can draft an assignment. In Overvecht-Noord they want to do it together, which makes it unclear who

can, who will, and in which way an assignment can be presented to market players. The current situation where it is unclear what is about to happen or what is to be expected could bring certain organisations in trouble. As an example the representative of Eneco tells about a different area in Utrecht where Eneco needs to replace a part of their infrastructure, putting them in a similar situation as Stedin in Overvecht-Noord. The question for Eneco is whether they have to take into account that the capacity of their heat network has to be increased in that area or not. Since there is no clear answer to this question right now Eneco is posed with the dilemma of either maintaining the current capacity at the risk of having to expand at a later point in time or taking the investment risk of expanding the capacity now with a chance of doing too much. As a result Eneco tries to hold off on the work on the infrastructure which introduces more risk in the system, says the representative of Eneco. This kind of uncertainty is of course not only valid for organisations as Stedin and Eneco. Also the inhabitants of the neighbourhood who need to replace their heat- or cooking installations, or even required attributes, are faced with this uncertainty whilst the sum of a rather large investment is hanging over their head. This indicates that a good solution is not only about finding the right alternative, but also about the amount of time that is spent on it.

The process itself is also faced with various forms of uncertainty. This process is a testing ground, which means that the outcomes of this process help determine the future of other processes. As respondents B., D., and F. indicate, this also means that law- and regulations, as well as available subsidies, are under development. The programme team cannot take these developments into account at the moment, where they are not fully developed or even entered into force yet. The lack of law and regulations, and therefore lack of instruments to enforce the transition, has to be compensated with collaboration. The lack of subsidies imposes a difficult financial threat that is difficult to solve, especially when taking into account that the energy advices provided to the inhabitants of Overvecht-Noord showed very undesirable numbers, as discussed in chapter 7.

According to the (built) environment manager the order of doing things in Overvecht-Noord was not the most logical one. In other neighbourhoods the Municipality will have announced a transition vision heat which provides an indication of possibilities before starting such a project. That would mean that from the start of the process it is already more clear what can be expected from it. She adds that such things are also what a testing ground is meant for; to learn.

The involvement of inhabitants is an aspect surrounded by much discussion. Most of the respondents recognise that the inhabitants form a crucial part of the process. Respondent F. points out that in for example Gelderland Municipalities want to wait until there is support amongst the inhabitants before even starting a project. The representative of Energie-U feels that the neighbourhood initiatives in Overvecht-Noord have been very valuable to the process and show prowess. As the representative of Energie-U sees it, these groups were able to make contact with the inhabitants at a different level than the programme team would probably be able to do. The neighbourhood initiatives have a different background, reputation, and appearance. Because of that the representative of Energie-U thinks that creating a supportive attitude amongst the inhabitants towards the natural gas transition, like these neighbourhood initiatives did with collecting signatures for their manifests, is more difficult to accomplish by a group of professionals such as the programme team. The representative of Energie-U is therefore also convinced that it would have added value if these neighbourhood initiatives would be more closely involved in the process, possibly by having representatives in the steering group. He also points out that he is somewhat surprised by the way

these neighbourhood initiatives managed to organise themselves and what they have achieved. Up front Overvecht-Noord would not have been the most logical choice to start with this process if it were the (explicit) intention to cause a bottom-up movement, he says. There are other neighbourhoods that would show more promise up front for achieving something like that.

8.7 Overvecht-Noord in the view of process management

The scope of this research focuses on a specific part of the process in Overvecht-Noord on abolishing the use of natural gas. The focus of this research is mainly set to the neighbourhood level with specifically the programme team as main object of research. It has to be acknowledged that the substantive decision making power is vested in the Regietafel and not in the programme team. However, the empirical material available for this research does not include much information about the occurrences in the Regietafel. It turned out that certain elements of process management seem to be more relevant at the level of the Regietafel and therefore it is not possible to obtain full insight in how the process in Overvecht-Noord fits into the analytical framework based on process management.

Secondly, this research focusses on the period from spring 2016 till autumn 2019, whilst the process is still ongoing at the time of conducting this research. Based on a qualitative analysis of the process and the deliverables of the programme team, it turns out that this period of the process can be defined as what process management refers to as pre-negotiations. The transition plan, the main product of the programme team up to autumn 2019, can be seen as a set of process agreements that outline the remainder of the process. This transition plan is a product of negotiation in the programme team and is authorised by the Regietafel. However, due to the demarcation of this research, the part of the process where the substantial decision making is taking place is not a part of this research.

Openness

The process shows that the involved parties are able to negotiate on their behalf. Seeing the process as pre-negotiations and the transition plan as process agreements shows that the involved parties came to an agreement under which conditions they are willing to work together on this process. These agreements take into account the interests of different organisations, allowing room for negotiation later in the process. Although a broad variety of stakeholders is represented in the Regietafel and the programme team, most of the respondents indicate that it is unlikely that other parties can join these arenas later in the process. No one, however, excludes the possibility of involving other stakeholders in different ways, just the formation of the programme team and Regietafel seem to be closed. The main actor group that is dissatisfied with the situation are the inhabitants. Although there are no longer inhabitants participating in the programme team, they managed to organise themselves which created a better foundation for representation. Since the programme team wants to work alongside the neighbourhood initiatives they are still included in the process to a certain extent.

Protection of core values

The main mechanisms observed that deal with protecting the core values of the participants include allowing room for the interests of the organisations and having the possibility to leave the table.

Including the perceptions and interest of all stakeholders makes that they don't have to compromise their core values per se. Having the option to leave the process is another final measure a party can take to preserve their core values. However, there are no clear rules determined on leaving the process. The (built) environment manager for example points out that it is unclear what the consequences would be from an organisation leaving the process. Would it mean that they no longer comply to natural gas free or do they only no longer influence the decision making process? It is known that leaving the process is possible since Eneco did it, but the other participants were not pleased by it. Exit rules are possibly more relevant and decided upon at the level of the Regietafel.

Progress

Taking into account that the actual substantive decision making takes place in the Regietafel, it appears that the process is properly staffed. The process also shows that there have been a lot of (organisational) changes made to improve the process. Additionally there is a structure in place that allows to deal with conflict at different levels so that the decision makers are relieved of conflicts that might result in resentment.

There are different views concerning whether the process progresses enough or not. The view from the programme team participants is mainly that they have been working on the process instead of the substance, which they see as a necessity to be able to support participation. However, some organisations and the inhabitants feel that an indication for solutions should have already been presented. This creates dissatisfaction amongst certain stakeholders which could even lead to resistance as well. Therefore it is concluded that the progress forms a bit of a bottle neck. There are several reasons that hamper the progress. Firstly, there seems to be a mismatch in urgency between the stakeholders. Some require the process to move fast while others don't have this incentive and might want to take their time. Secondly, this process is a testing ground which means that the programme team is figuring out how to approach their task along the way. There are no blueprints available and therefore learning along the way, and thus making mistakes as well, are part of this process. And thirdly, the process is based on trust, ambitions, and willingness to collaborate but there are no formal or process agreements in place that can help to ensure parties live up to their commitment.

Substance

The process shows quite some awareness concerning the substance of the process. The programme team eventually decided to outsource the required calculations for the alternative solutions. By including external, independent organisations the credibility of the knowledge generation gets a boost. Additionally, the participants agreed to use these calculations as a basis for substantial negotiations which means that not only is new knowledge generated during the process, but also that the parties agreed to use the same knowledge base. Also, it is the intention to consider a broad variety of options and be transparent in the findings about why certain options were excluded from elaborate calculations.

9. Conclusions and reflection

This study observed the decision making process in Overvecht-Noord concerning the abolishment of the use of natural gas up until the point of the publication of the transition plan. The aim of this research is to gain insight in the decision making concerning the abolishment of natural gas in the built environment. The main research is focused on answering the following main research question:

What mechanisms play a role in the decision making process on realising a natural gas free neighbourhood?

In order to answer this question the study is designed to answer the following subquestion:

1. *What entails process management and which conditions should a decision making process meet?*

2. How is the decision making process and the interactions between the involved actors in Overvecht-Noord shaped, taking into account important elements of the process, the interests and motivations of actors involved, barriers, and possibilities?

3. *From a process management point of view, what aspects and barriers concerning the decision making process in Overvecht-Noord can be distinguished, while acknowledging the confrontation of the results gathered in subquestions 1 and 2?*

By means of conducting case study research, desk research, and in-depth interviews data is generated on the decision making process in Overvecht-Noord. With the use of this data a reconstruction of the decision making process is made. Consequently an analysis of this reconstruction is performed with the use of an analytical framework based on the notion of process management as described by De Bruijn, Ten Heuvelhof, and In ‘t Veld (2010). The first section presents the main findings of this research by answering the subquestions. Additionally, by taking the outcomes of all these steps into account an answer to the main research question is formulated. The second section presents the lessons learned from this research. The chapter ends with a section including reflections on this research.

9.1 Findings

9.1.1 Process management

Process management is a concept described by De Bruijn, Ten Heuvelhof, and In ‘t Veld (2010) that concerns change in complex issues, and more specifically the process aspects of change. Change that is meant to occur within a complex network of interdependent actors generally requires the effort of several parties. These stakeholders might have different stakes in the change or maybe not even have a direct interest at all. Therefore a process should be designed in such a way that the change

can be negotiated and the process becomes interesting to every crucial party of interest. De Bruijn et al. recognise four core elements to process management, which if applied properly in the process can bring about broader and more balanced perceptions, reduce resistance of involved parties, and creates a knowledge base with new insights and information available within the process. The four core elements concern:

1. *Openness*

Party involvement is an important aspect of process management. All relevant parties should be included in the process. Otherwise not all knowledge and resources will be available to the process and reducing resistance becomes more difficult if the party in question does not participate in the negotiations.

2. *Protection of core values*

The outcomes of a process can have favourable and unfavourable results divided over the stakeholders. This can scare off organisations to participate in the process. Therefore it is important that every party involved has a sense of safety, they have to know that the core of the existence of their organisation is not at risk.

3. Progress

The process should move forward. Having a lot of parties with different interests at the same table leads to a lot of discussion and negotiation. The process cannot get stuck in endless discussions, rather it should move forward towards an end result.

4. *Substance*

The results of the process should also be acceptable in qualitative terms. Conflicting interests, power imbalances, and incentives for progression can lead to a suboptimal result of decision making. Therefore the substance of the process should be preserved.

These four core elements contribute to creating a process that provides the right atmosphere for collaboration; a process that provides gains for each party, that doesn't hurt an organisation in its core values, that progresses in a timely manner, and leads to a substantiated outcome that meets certain quality standards. These elements relate to each other in a circular way, meaning that placing more emphasis on one particular element can cause (negative) effects concerning different elements. Therefore the elements should be balanced out in such a way that fits the particular process at hand.

9.1.2 Decision making process Overvecht-Noord

The decision making process in Overvecht-Noord can be divided into four rounds. The first round starts in the spring of 2016 and includes the initiation of the process. The Municipality of Utrecht started with exploratory conversations to map the situation concerning the energy transition. In doing so they made inventory of which stakeholders would be useful and crucial to invite to the table. This ended with installing the Regietafel in which the Municipality of Utrecht, Energie-U, Eneco, STUW (Platform for Housing Associations Utrecht), and Stedin took place.

The Regietafel decided to start with the project of making Overvecht-Noord free of natural gas use, which meant the start of the second round in the summer of 2016. During this round a newly initiated project team worked out preliminary work. They worked on the demarcation of the project area, deciding on the precise goals they want to achieve, and gathering information and data concerning the task.

At the start of the third round the first meetings where the inhabitants of the neighbourhood were informed were held. The project team, which transformed into the now called programme team, couldn't provide with (all) the information the inhabitants were hoping for, which led to a rather negative reaction towards the process amongst the inhabitants. The programme team continues working and eventually ends up with the Infrastructural Footprint study and a first proposal for a transition plan. These plans were turned down by the Regietafel, they stepped in and installed a new programme manager.

In the fourth round the programme team decided to take a step back, away from the substance of the process and focus more on the participation aspects. In doing so they created the transition plan that incorporates a roadmap on how they want to approach the process. This transition plan was approved by the Regietafel and published in the autumn of 2019.

After the fourth round the programme team started working on the steps they set out in the transition plan. However, this continuation of the process is no longer part of the scope of this research.

Interactions

The process recognises a couple of active arenas. The main arenas that are concerned with policy making for the abolishment of natural gas from Overvecht-Noord are the Regietafel and the programme team. The Regietafel is active at the level of the city and is concerned with the entire energy transition in Utrecht. Several stakeholders are active in this arena: the Municipality of Utrecht, Energie-U, Eneco, STUW (Platform for Housing Associations Utrecht), and Stedin. The Regietafel is the arena where the investment decision making power is vested.

The Regietafel installed the second arena, the programme team. The programme team works in assignment for the Regietafel on abolishing the use of natural gas from the neighbourhood Overvecht-Noord. The programme team works out the details of the process but the final decisions are made at the level of the Regietafel. The parties that are involved in the programme team reflect the parties in the Regietafel, except for the housing associations that don't have any property in Overvecht-Noord. The programme team has frequent discussions with a sounding group where inhabitants of the neighbourhood are presented with the possibility to provide feedback on the plans of the programme team.

Next to these arenas concerned with policy making, there are two other mechanisms that are of importance. The housing associations maintain contact with their tenants, mainly through the tenant associations. These communications can be defined as negotiations. When a housing associations wants to renovate the dwellings whilst there are people occupying them, they have to negotiate the terms of the renovations with the tenants. At least 70% of the tenants have to agree with the plans for renovations for the housing association to be able to carry them out.

The second mechanism that is important to the process in Overvecht-Noord concerns the neighbourhood initiatives. Some inhabitants in Overvecht-Noord felt left out of the process. They didn't want to be told what to do and how to spend their money. They wanted to have a say in the decision making process as well. In first instance some inhabitants wanted their part of the neighbourhood to be excluded from the process and tried to achieve this by means of collecting signatures. Later in the process, when attempts to get out of it had failed, the inhabitants decided to start neighbourhood initiatives that would represent the voice of the inhabitants. There are two main initiatives, Nieuwe Energie voor de Vechtzoom and Klopvaartbuurt aardgasvrij, that made contact with the inhabitants of (their part) of the neighbourhood and each set up their own manifest with conditions under which they are willing to cooperate with the process. These conditions are based on the input put forward by the inhabitants of the neighbourhood. Both these initiatives work together in order to get their message across to the programme team.

9.1.3 Aspects and barriers from a process management perspective

The process in Overvecht-Noord from spring 2016 until autumn 2019 can be characterised as pre-negotiations for what is more to come. During this time period of 3 years the programme team had to figure out how to approach the task at hand. This occurred by trial and error. Eventually they realised they had to set up a plan of approach, which resulted in the transition plan which was approved by the Regietal in the autumn of 2019. This plan includes the agreed upon steps that will be taken in order to come to a substantive decision.

The openness of the process is an important aspect that poses challenges. Various organisations are involved in the programme team, however the inhabitants form a very crucial actor group that is not directly represented. The process shows that the lack of involvement of the inhabitants led to resistance early in the process. Finding a way to create support among the inhabitants is very important, given that it is close to impossible to abolish the use of natural gas if (the majority of) the residents don't want to comply. This is the case for both owner occupiers and tenants.

A good mechanism concerning openness that is used in the process thus far is that certain topics of discussion are postponed. The transition plan and assessment criteria used to assess the alternatives to natural gas include criteria and agreements that reflect the interests of the involved parties. By doing so the participants of the process feel there is something to gain from the process. Additionally by postponing discussions, instead of deciding early in the process, more time and opportunity is generated for all parties to negotiate their interests whilst everyone preserves a prospect of gain.

The protection of core values seems to have played less of an important role thus far in the process. The mechanism of postponing decisions or discussions also turned out to be useful in protecting the core values of the housing associations who needed to preserve the possibility for them to come up with a solution that is in line with their core task; providing affordable housing to low income households. Another occurrence concerning the protection of core values is that Eneco left the negotiation table when the substantive negotiations started off. They decided to do this in order to preserve the core of their business; selling energy.

The progress of the process turned out to have a significant effect on the way stakeholders perceive the process. To some the process appears to be too sluggish, others disagree with that perception. The relatively short time span that is set out for the process and the fact that a lot of people are living in uncertainty about what they can expect make that some stakeholders feel uncomfortable about the process. This has a negative influence in the way they perceive the process and possibly to their willingness to cooperate as well. Three major aspects came forward that hamper the progress. One, not every stakeholder perceives the same sense of urgency, causing a mismatch in incentives to progress between the involved organisations. Second, the process is based on trust, ambition, and willingness to collaborate. Where this is very positive from the perspective of intentions, it appears to lack the proper level of commitment. The third aspect that hampers progress to a great extent is the fact that it involves a testing ground. Since there is no predefined outline on how to approach this task, the process is characterised by trial and error, which takes a lot of time.

Concerning the substance of the process there are quite some positive aspects. The Regietafel appointed an independent (built) environment manager and an independent programme manager. The fact that these functions are filled by independent actors takes away the possibility that the perception arises that a certain stakeholder dictates the process, while at the same time embedding an independent view in the programme team that is not driven by direct stakes in the process. Secondly, the programme team decided to outsource the calculations concerning alternatives to natural gas. This way a new knowledge base is created which forms the main foundation for the substantive negotiations, while at the same time the credibility of the results of the calculations is maintained.

9.1.4 Mechanisms that play a role in the decision making process

Taking into account the previously discussed outcomes of this research the main research question can be answered. This section provides the mechanisms that play a role in the decision making process, based on the outcomes of case study research on the decision making process concerned with abolishing the use of natural gas in Overvecht-Noord up to the point of publishing the transition plan.

The decision making process in Overvecht-Noord on abolishing the use of natural gas in the neighbourhood has several typical characteristics. Although there is no formal power that allows the Municipality to enforce abolishing the use of natural gas, the stakeholders know the energy transition is going to affect them one way or the other. The approach in Overvecht-Noord is therefore characterised by a diverse set of stakeholders who placed themselves in a horizontal playing field to negotiate an alternative to the use of natural gas. The goal is to create consensus and participation. Derived from the answers to the subquestions it can be concluded that the main mechanisms that play a role in the decision making process in Overvecht-Noord on abolishing the use of natural gas can be defined as:

Finances

Everybody is living in times of uncertainty and no one knows how to address the situation. No one can move forward. Stedin cannot remove the gas infrastructure, they also don't know whether or not and with how much they have to strengthen the electricity grid. Housing associations don't know which installations they have to take into account when renovating their properties. Eneco doesn't know whether they can expand the heat network, and households don't know what to do when their heat installation or cooking- installation and attributes need to be replaced. At the same time a huge investment sum is hanging over each and everyone's head. The financial challenges in this process are difficult to solve and will most likely play an important part in whether or not the process ends successfully.

Party involvement

Good efforts have been made by involving a broad variety of actors in the main arenas of the process, namely the Regietafel and the programme team. However, one group that is very much affected by the transition seems to feel like they are not properly involved in the process. It concerns the inhabitants of the neighbourhood. The rented dwellings to a great extent are the responsibility of the landlords and this group is somewhat easier to approach given that landlords generally possess several units, especially when it concerns housing associations. However, the owner-occupier population is an even more diverse group of individuals. Without the efforts of these people abolishing natural gas is not possible. It is therefore very important to involve this group in the process in the correct way, so that they feel their opinion matters, the chosen solution is also their solution, and a willingness to cooperate from their part is created.

Interests and negotiation

A mechanism that works well in the process is the acknowledgement of party's interests and providing the room to negotiate. This provides the prospect of future gains which allows the individual parties to see a benefit in participating in the process. Having possibilities to protect core values is important in this aspect as well. Without mechanisms in place that provide this protection, commitment to the process would be more difficult. In Overvecht-Noord it is possible to step away from the process as an ultimate measure, however the complications of doing so are unclear.

Urgency

The process seems to entail a different sense of urgency to different stakeholders. As long as parties don't feel the urgency to progress they have an incentive to obstruct. Therefore a sense of urgency for every involved party is very important and it preferably has to be linked to the same time span as well.

Agreements

Participation in the process is mainly based on trust, ambition, and willingness to cooperate. This means there is no mechanism in play to ensure participants follow through on their commitments. This can lead to a sluggish process. Making agreements upfront concerning what is expected from everyone involved can help solve this issue.

9.2 Lessons learned/recommendations

The outcomes of this research indicate implications for the decision making concerning the abolishment of natural gas from the built environment. Some findings are more applicable to the specific neighbourhood Overvecht-Noord, whilst others shed light on implications that in general can be in play in other neighbourhoods as well. Secondly, the scientific implications of the use of the analytical framework based on the notion of process management are discussed.

9.2.1 Lessons learned from the process in Overvecht-Noord

The neighbourhood Overvecht-Noord is characterised by a high percentage of social housing; 69% of the dwellings. Additionally, there is a heat network present that provides 71% of the dwellings with the required energy for heating. 58% of the dwellings only use natural gas for cooking and only 25% uses natural gas both for cooking and heating.. Out of the 8335 houses only 2060 have to undergo far stretching alterations in order to no longer be dependent on natural gas for heating and cooking. The largest amount of dwellings, the 4829 that only use natural gas for cooking, also require alterations but these would be less impactful and costly. Beforehand these circumstances would be expected to have a positive influence on the progression of the natural gas transition, however in Overvecht-Noord this expectation is not necessarily met.

The physical aspects of the neighbourhood are decisive for the challenges that are presented. In Overvecht-Noord the existing heat network determines the magnitude of the task at hand, and provides the possibility of expanding this network. The relatively large amount of social housing brings about a certain degree of influence. It is expected that when a housing association chooses a certain heat solution it becomes most beneficial for the surrounding households to choose that same solution. This can be used in a positive way since housing associations can then form a driving force of the transition, which is easier to accomplish than having to negotiate with a large number of individual households. The ratio of owner occupiers to social housing will of course differ between neighbourhoods. When the portion of owner occupiers in an area is bigger or even dominant over social housing, a very different dynamic between the stakeholders can occur. It is likely that in such an instance even more emphasis has to be placed on the inclusion of the owner occupiers in the process.

In Utrecht the Municipality wants to address the energy transition together with the involved stakeholders. This attitude of the Municipality led to a participatory approach to the abolishment of natural gas in Overvecht-Noord. However, the research also shows that the Municipality is the main stakeholder to take the initiative whilst faced with a lack of instruments to enforce the natural gas transition. This same situation is applicable in any other area in the Netherlands. As long as this lack of tools to enforce the goals exists, reaching consensus about the plans is imperative. The way to reach this consensus can take different shapes and forms and is dependent on the specific characteristics of the neighbourhood and the stakeholders.

The reaction of the stakeholders in each neighbourhood can be very different. In Overvecht-Noord it was not expected that the inhabitants would put as much effort in influencing the process as they did. This shows that flexibility in the process is required. The willingness of the inhabitants of a neighbourhood to put effort in the natural gas transition is likely to be very different for each neighbourhood. Therefore the appropriate way of involving this group really much depends on the

situation at hand. Choosing the wrong approach can lead to negative results, as shown in Overvecht-Noord where petitions against the plans were set in motion by some inhabitants relatively early in the process. It is crucial to find a way to deal with these situations and adapt the strategy in order to resolve the issues. This requires flexibility and a circular approach. Marlen and Barth (2012) stated that the linear character of conventional urban planning processes hampers interaction and feedback. This showed in Overvecht-Noord, where a more linear approach as adopted in the first rounds of the process mainly led to resistance amongst stakeholders. By making iterating steps; adapting organisational structures, shifting the focus of the process, and rethinking the positions of stakeholders, the programme team was capable of resolving some issues and creating more support amongst the stakeholders to a certain extent.

Another lesson that can be taken away from the process in Overvecht-Noord is that interests and sense of urgency have significant influence on the course of the process. Stakeholders have differing interests and these interests are relevant at different points in time. This makes that stakeholders find themselves in different (negotiation) positions. In light of process management the negotiations cease to stagnate in these kinds of situations due to the interdependent relations between the parties involved. However, in Overvecht-Noord it appears that not every party involved feels the required sense of urgency that makes them aware of these interdependent relations. No one is convinced that after a certain period of time there won't be any more natural gas available. On the contrary, there appears to be a believe that if they cannot work it out, the Overvecht-Noord process as testing ground will just be declared as a learning moment and it will be done with that without actually having to sacrifice much in order to achieve the goals. Without this sense of urgency stakeholders will not find the need to make the required compromises, but rather they might hold on to unrealistic demands.

The final lesson that can be learned from the process in Overvecht-Noord is that the natural gas transition includes a societal component that has heavy impact on the process and that involving the inhabitants of the neighbourhood is a very difficult challenge. The natural gas transition does not only rely on technical elements, the relations between parties involved and the specific interests of individual stakeholders are very much determinant for the way the decision making unfolds. This dynamic is strengthened by the fact that in the existing built environment an important part of the decision making power is vested with the building owners. This means that every owner occupier has a decision to make and in case of the rental sector in most cases permission from the tenant is required for energy renovations. As turned out in Overvecht-Noord the involvement of the inhabitants in the process is challenging. At first there was resistance amongst the inhabitants against the plans of making the neighbourhood natural gas free. Representatives for the inhabitants in the programme team were let go after some time because the programme team came to the conclusion that this was not a functional way of including the inhabitants in the process. And eventually in some areas of Overvecht-Noord neighbourhood initiatives were formed by the inhabitants in an attempt to steer the process in their favour. In the Overvecht-Noord process the correct way of including the inhabitants is not yet discovered. For the continuation of the process some think the neighbourhood initiatives should get a more formal position in the steering group, whilst others are concerned with the legitimacy of any representation for the inhabitants to speak for all of the inhabitants and not just for a select few. This poses a dilemma with on the one side the difficulty to find a proper way of representing the inhabitants in the steering group or the

programme team that does justice to all the inhabitants of the neighbourhood, and on the other side the threat that exclusion of the inhabitants from these arenas can result in suspiciousness or dissatisfaction towards the outcomes of the process. Further research is required that focusses on strategies or approaches on how the inhabitants of a neighbourhood faced with the natural gas transition can be included in the process in such a way that this dilemma can be worked around.

9.2.2 Scientific implications

The research conducted in this report has its focus on a relatively new phenomenon in the built environment. The energy transition introduces a new dynamic between stakeholders that imposes different challenges. Especially when concerned with the existing housing stock the decision making power is divided over a variety of stakeholders. The Municipalities currently do not have the required instruments to enforce the energy transition. This leads to a situation where interdependencies between the stakeholders play an important role. A possible way of dealing with this situation is trying to bring the stakeholders together in a participatory approach in order to work towards some form of consensus. Decision making then turns into a complex process of interactions. In order to be able to analyse this decision making process and gain insight in the dynamics and mechanisms that are in play a framework that incorporates elements of participation is required. In this research the notion of process management by De Bruijn et al. (2010) which generally describes elements that can help in designing a process is used in a reverse way, that is to analyse the process.

The analytical framework exists of four core elements characterised by a total of 31 indicators. Due to this magnitude of indicators a broad range of elements of the decision making process are taken into consideration. In conducting this research it turned out that it was relatively straightforward to link the elements of the process to the elements of the framework with the use of the indicators. This shows that the framework was very well applicable in researching the process in Overvecht-Noord. Additionally, there were hardly any elements identified in the process that were not possible to link to the elements of the framework. A side note, however, is that the linkage between the findings and the indicators was often more of a loose connection than a one to one identification. This generates a suspicion that the indicators of the framework are likely not yet exhaustive and could benefit from further elaboration and clearer definitions.

A high amount of indicators also makes it more likely that not every indicator is present in the object of research. That does not have to be an issue. Most of the elements and aspects are covered by several indicators. If one does not show in the object of research, another might. The indicators are used as a guideline for categorising the data conform the framework. This does not mean that every indicator has to be present in the object of research to be able to conduct a proper analysis. In this research not every indicator was identified, and some elements were more difficult to analyse due to the focus on the programme team whilst some elements turned out to be of more relevance at the level of the Regietafel. Despite all that, the use of the analytical framework still yielded a very insightful and well-structured analysis of the decision making process in Overvecht-Noord.

The notion of process management incorporates elements that focus on creating an environment in which a variety of actors are willing to participate in order to come to a mutually beneficial outcome.

This specific focus on bringing stakeholders together and keeping them together throughout a process is what makes this notion applicable to the decision making process in Overvecht-Noord. In Overvecht-Noord the goal is to work out a strategy to abolish the use of natural gas from the neighbourhood together with the involved stakeholders. Because the aim of the parties in Overvecht-Noord is to create a participatory approach where they negotiate in a horizontal playing field the notion of process management suits the environment in which the research is conducted. It is therefore expected that the analytical framework derived from this notion is only applicable to decision making processes that operate in a (complex) network of interdependent actors that are positioned in a more or less horizontal power field, or when the intention to operate in that way is evident. Concerning the natural gas transition Municipalities have several options on how to approach the task. They can choose a more top-down approach, a bottom-up approach where they mainly facilitate, or something in between. The analytical framework based on process management is therefore likely not applicable to every decision making process concerning the natural gas transition, but only to those that intend to entail a participatory approach.

9.3 Reflection

The research presented in this report is shaped to a great extent by the choices made by the researcher. The consequences of these choices are discussed in this section.

Research method: in-depth interviews

The decision making process in Overvecht-Noord is a complex process that includes a broad variety of stakeholders with different interests and motivations. The goal of this research is to create a better understanding of this process. In order to do that it was necessary to make a reconstruction of the process. The process is basically defined by the stakeholders that participate in it and therefore their individual perceptions and motivations are seen as a very important aspect of the process. It was therefore not possible to make a reconstruction of the decision making process in Overvecht-Noord solely based on document research. Including in-depth interviews was of added value to the research for several reasons. First, documentation available concerning the process did not provide enough insight to determine how the process really unfolded. Secondly, the background of the participants in the process proved to be very determinative for the outcomes thus far. The in-depth interviews provided not only information on the occurrences in the process, but also shed a light on the motivations and dynamics behind those occurrences.

A critical note concerning the in-depth interviews is that in terms of preparation there is room for improvement. When going into the interviews there was very little known about the process beforehand. This was due to the expectancy that desk research would provide with a somewhat elaborate insight in the main occurrences in the process. This turned out to be not the case. This setback was overcome by placing the focus of the interviews more on the occurrences in the process and therefore less time was spent on the underlying mechanisms, whilst interviews are especially of added value to generate information on the latter. In hindsight a different approach to solve this issue could have been to schedule a few interviews to determine the occurrences in the process before scheduling the rest of the interviews, possibly with the same people. A structure like this could possibly have allowed to go into more detail during the (second) interviews and in doing so generate more information on the underlying mechanisms. Since the research was already underway and time constraints did not allow for this more elaborate interview setup, this option was not chosen.

There was an enormous amount of data generated for this research which resulted in a very rich analysis of the decision making process in Overvecht-Noord. The obtained data provided enough information to successfully conduct the research and reflect on all aspects of the analytical framework. The generated data could however have provided a little more in depth information from a broader variety of viewpoints if not only participants of the programme team were interviewed. Efforts were made to get an interview with a couple of members from the Regietafel and with an actively involved inhabitant. However, partially due to complications connected to the corona crisis it was not possible to set an appointment. In another case two of the contacted people did not want to cooperate with an interview because they didn't agree with the research set up and would only want to consider providing an interview if this set up would be adapted to their liking. Unfortunately, because it was not possible to conduct these interviews certain aspects and perceptions are a little under represented. The lack of in-depth information from the standpoint of both the inhabitants and the Regietafel was compensated by using information available through documentation, indications by members of the programme team, and news articles and websites of

neighbourhood initiatives. Also a few statements from personal communication with an actively involved inhabitant were included in the research. Despite these efforts it was not possible to fully grasp the viewpoints of these two groups and therefore the dynamics between the programme team and the Regietafel as well as the dynamics of interaction with the inhabitants are not fully explored.

Demarcation of the research scope

This research focusses on the decision making process in Overvecht-Noord on how to abolish the use of natural gas from the neighbourhood. Specifically, this process was demarcated timewise from the spring of 2016 till autumn 2019. This demarcation was opted because of two reasons. Firstly, the process was still ongoing, which would make it very difficult to conduct the research when every day new developments would come to light. Secondly, in the autumn of 2019 the programme team, or rather the Regietafel, published the transition plan Overvecht-Noord natural gas free which could be seen as a milestone in the process. Therefore this timeframe, from the initiation of the process until the publication of the transition plan, provided with a clear demarcation of the object of research and it made it possible for the respondents to think about the process from start till transition plan. This made it easier to communicate during the interviews because there was a clear part of the process to refer to.

The second demarcation of the scope concerns the level of the process where the focus was put towards. The process plays at different levels with different arenas. The Regietafel plays on the level of the city of Utrecht, whilst the programme team only focusses on the neighbourhood Overvecht-Noord. It was opted to focus on the neighbourhood level for several reasons. First, the process of abolishing the use of natural gas focusses on this level and therefore it was expected that most detailed information could be obtained from the programme team. Secondly, from communication with the programme manager it seemed that most of the information required for the research could be obtained from members of the programme team. Additionally the chance that members of the programme team were willing to participate in an interview was expected to be higher than with members of the Regietafel.

There are pros and cons to the choice to focus on the programme team. The members of the programme team turned out to be willing to cooperate with an interview, which made that scheduling appointments went relatively smoothly. Secondly, the details of the decision making process in Overvecht-Noord are worked out in the programme team and therefore the members of this team could provide with a lot of useful information. A major shortcoming however is that the investment decision making power is vested in the Regietafel. It turned out that the programme team works out the details of the process, but the actual decisions are made in the Regietafel. Also the initiation of the programme team, and the entire process for that matter, was worked out at the level of the Regietafel. When taking the analytical framework based on process management into account, certain aspects were more applicable to the Regietafel and with the absence of in depth information on the occurrences in this arena certain aspects of the framework were more difficult to take into account.

It was acknowledged during the research that some information could only be provided by members of the Regietafel. Therefore efforts were made to get an interview with several members of the Regietafel. However, unfortunately partly due to corona implications, it wasn't possible to conduct an interview with these people. The lack of information about and from this arena made

that the dynamics between the Regietafel and the programme team are not as elaborately reflected upon as would have been desirable.

Analytical framework and model

In this research the rounds model by Teisman (2000) and an analytical framework based on process management as described by De Bruijn et al. (2010) are used. The rounds model is used to make a reconstruction of the process. It was very useful to make use of this model, because it provides with a clear structure to analyse the process. Additionally, this is an established model and therefore it was expected that it would be of added value to the analysis. The rounds model was very useful in recreating the process, however, it did not provide a clear structure to recognise or assess the aspects or mechanisms of importance to the process. An additional framework is required to make this second step.

This is the point where the analytical framework based on process management comes in. It was opted to create an analytical framework based on the work of De Bruijn et al. (2010) because of the familiarity with this work and its focus on negotiation processes in complex networks where participation is a crucial aspect. The energy transition entails a new challenge in the built environment and suitable frameworks with a participatory element that fit this context were not evident. The notion of process management fits this context of the energy transition, however this notion is intended for designing negotiation processes. In order to use this idea of process management to analyse the process it was required to convert the core elements and design principles presented in the book of De Bruijn et al. (2010) into terms or definitions that would provide a clear structure for analysing the process. The analytical framework that was derived as a result proved to be of added value in analysing the decision making process in Overvecht-Noord with a focus on participatory elements. Determining this framework required a lot of time, which was restricted by the time limitations of the master thesis project. The analytical framework used in this research is therefore to be perceived as a very first version that shows promise for analysing decision making processes. In order to develop this framework into a well-established tool, the applicability of the framework has to be researched as well as a further elaboration on the elements of the framework. In elaborating the elements or indicators of the framework it can be useful to explore fields of knowledge sharing, negotiated knowledge, complex networks, and network governance. These are fields referred to by De Bruijn et al. (2010) themselves or that came up when researching the elements of process management. In that sense it is expected that literature concerning these topics can provide more insight in the dynamics of process management. In order to properly operationalise a framework based on process management, a qualitative meta study could be conducted in order to identify patterns in the literature. Based on these patterns it is possible to define the elements of importance to decision making processes in complex networks and elaborate on them. This could provide a proper basis for improving this framework by defining a more exhaustive and clear defined set of indicators that allow for investigating these decision making processes.

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