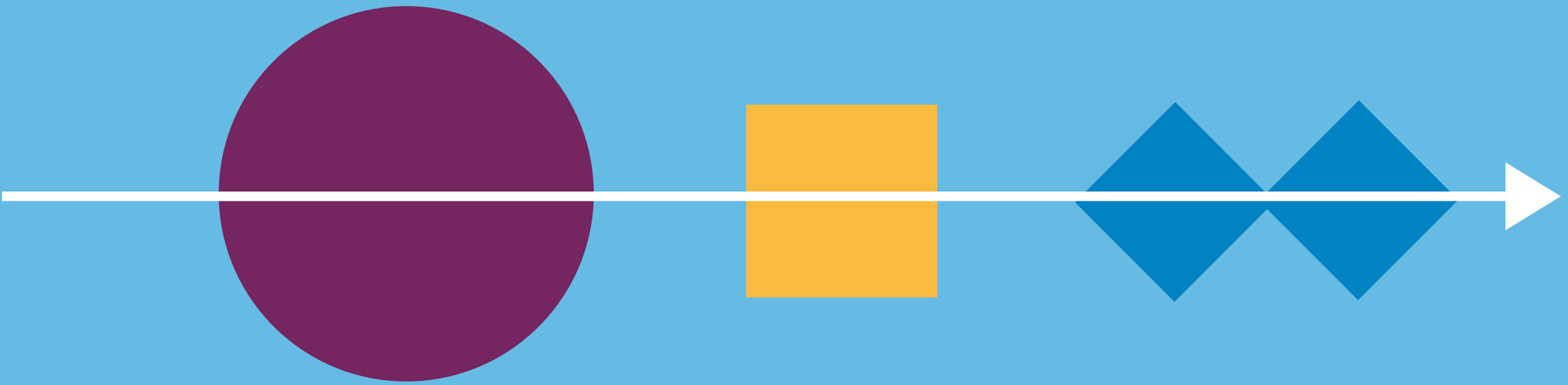
Scaling citizen participation through local energy initiatives

Insights in the roles and contribution of the local energy initiatives in The Hague and a strategy and action repertoire for the municipality of The Hague.



A.L.F. Commu
December 2021

Master thesis Industrial Ecology
Leiden University & TU Delft

Master thesis Integrated Product Design
TU Delft

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Master thesis
MSc. Industrial Ecology (joint degree)
Faculty of Science
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Faculty of Technology, Policy and Management
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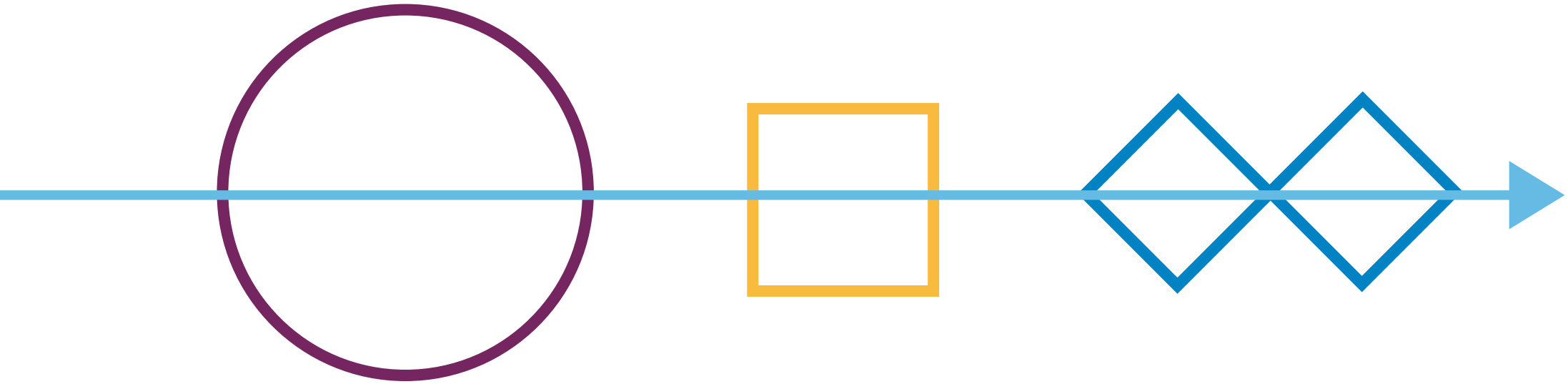

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Master thesis Industrial Ecology
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Master thesis Integrated Product Design
TU Delft

INTRO

ACKNOWLEDGEMENTS

Dear reader,

December 2021, Rotterdam

Before you lies my final thesis for both the Master Industrial Ecology at Leiden University and Delft University of Technology and the Master Integrated Product Design at Delft University of Technology. In September 2018, I took the challenge to start the journey of not one but two Master degrees. An ambitious plan, which I hoped I would not regret during the coming 3,5 years. During these years, there are two things that particularly attracted my interest. These are the subject of the Energy Transition and the field of Service Design including its human-centered approach. Both these things come back in this thesis.

Throughout the writing of this thesis, I have received a great deal of support and assistance. In the first place, I would like to thank my supervisory team from the TU Delft. Ingrid for her knowledge and experience regarding the 'Participatory Domain', Jaco for his experience with citizen participation and the TSI framework, and Abhigyan for his experience and critical feedback regarding the connection between research and design. Overall, your feedback and pointed questions brought my work to a higher level.

Secondly, I would like to thank my supervisory team of the municipality of The Hague: Tibbe for his inspiring creativity and his advice as an experienced Service Designer in the municipal context, Esther for her valuable insights about citizen participation in the context of the Energy Transition, the way the municipality works and the current state of the relationship with the local energy initiatives, Nana for her effort and collaboration during multiple workshops and prototyping sessions, and Nick for his knowledge about citizen participation and his observations as Designer.

Thirdly, I would like to provide a very special thanks to all the collaborating initiatives: Vogelwijk Energie(k), Buurt Energie Statenkwartier, Statenwarmte, Stichting Hernieuwbare Warmte Ypenburg, Duursaam Benoordenhout, Gasvrij Scheveningen, Duttendel & Wittenburg, Bloemen- en Bomenbuurt (BLOB), Rivierenbuurt/Spuikwartier, Vruchtenbuurt, and Heesterbuurt. Your energy, motivations, achievements and professionalism were very impressive and I hold all of you in high regard.

Finally, I would like to thank my friends and family for their support and the way they provided me with energy and optimism to finish this thesis. They were always there when I needed to blow of some steam.

The thesis is a combination of a theoritical research with practical applicability. This combination was what I found the hardest but also what I like the most. To close, I wish you pleasure reading this thesis and hope you will enjoy it.

Louka Commu

EXECUTIVE SUMMARY

Within the Energy Transition, citizen involvement is essential. In the end, we have to change together to succeed within the Energy Transition. Because of the local character of the Energy Transition and a responsibility shift, the municipalities have got the challenging task to increase citizen involvement. Local energy initiatives can be a promising solution for the Energy Transition. Therefore, the local energy initiatives can be interesting for municipalities when increasing citizen involvement.

The aim of this research is to find a way for the municipality to make use of these local energy initiatives when trying to increase citizen involvement in the Energy Transition. The specific context of this research is the city of The Hague. The following research question has been formulated for this purpose: How can the municipality of The Hague increase citizen participation in the Energy Transition through local energy initiatives?

In order to answer the research question, a collective case study and a design process are executed. In advance, preparatory research was conducted to explore relevant theoretical concepts for the research and to analyze the stakeholder ecosystem of the local energy initiatives. The collective case study was performed by conducting nine in-depth interviews with local energy initiatives based on a research framework. This research framework was substantiated by the Transformative Social Innovation framework. Furthermore, the design process is based on the Double Diamond approach using divergent and convergent thinking. Within this design process, multiple participatory elements were included like workshops and prototyping sessions with local energy initiatives and civil servants of the municipality of The Hague.

From the research, it appeared that the local energy initiatives in The Hague fulfill a basic role and five specific roles, namely 'awareness creation', 'action perspective creation', 'collaboration with the municipality', 'voice at the table', and 'execution and ownership'. It also came forward that the potential of the contribution of the local energy initiatives to the Energy Transition is not reached. This has three reasons. Firstly, there is no shared vision among the stakeholders. Secondly, the relationship with the municipality is undefined and inconsistent. Thirdly, there are several small challenges as keeping the initiative going, reaching out to people, and not being representative for the neighborhood. When looking at the relationship, the core challenge seemed a way to prioritize and choose the municipal support to provide, to which initiative, and at which moment.

Based on this, a final concept was developed to create a strategy and action repertoire for the municipal support per neighborhood and initiative. The strategy is created based on three main questions regarding which roles to support, which support to provide, and how to provide the support. These questions are answered through the three perspectives of Design Thinking (desirability, feasibility, and viability) to cover the multiple aspects to consider when creating the strategy. Possible further research could focus on the development of the final concept in real-life cases and on the applicability of the five initiative's roles and final concept in other contexts.

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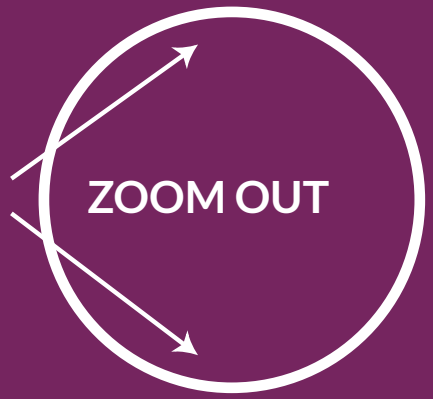


PHASE 1

In the first phase, the content of the research is introduced including the research question. To zoom out to the full context, preparatory research was conducted, which contains investigating relevant literature and the analysis of the stakeholder ecosystem. At the end of the first phase, the research approach for the second and third phase is presented.

1. THE STRUGGLE REGARDING CITIZEN INVOLVEMENT IN THE ENERGY TRANSITION

This first chapter presents the situation around citizen involvement in the Energy Transition with a specific focus on the context of The Hague. The chapter zooms in to two essential concepts linked to citizen involvement. These concepts are citizen participation and citizen initiatives. Furthermore, the problem statement is presented, which is about scaling citizen involvement through citizen initiatives. In addition, the content of the research and the research question are introduced. This research is commissioned by the Participation team of the Energy Transition program of the municipality of The Hague. Finally, the chapter explains the use of three phases and the approach of the first phase of this research.

1.1 CITIZEN INVOLVEMENT IN THE ENERGY TRANSITION IN THE HAGUE

One of the most significant challenges of our time is the Energy Transition. The way we currently treat the earth is not sustainable anymore. We need to decrease the amount of carbon pollution (WWF, z.d.). Because if we keep doing what we do, the consequences will be disastrous. These consequences include, for example, the rise of sea levels, an increase in temperature of the oceans, and more intense droughts or in other words climate change (WWF, z.d.). These effects are threatening crops, freshwater supplies, wildlife, and humankind. To create a sustainable society, we need to shift towards clean energy solutions. The Energy Transition is the worldwide shift from carbon polluting fossil fuels like oil, natural gas, and coal towards renewable energy like solar, and wind energy combined with lithium-ion batteries (S&P Global, 2020). In addition, energy preserving is also an important instrument (de Jong, 2011). The Energy Transition is radical and disruptive since it needs an entirely new infrastructure (hardware and software) and a new paradigm (Rotmans and Linden, 2014). How we look at our energy system, and how we deal with it is changing. There is a need for a fundamental change in how we produce, distribute, and consume energy. This change includes focusing no longer on a central, fossil, and top-down energy system but on decentral, renewable, and bottom-up (Rotmans and Linden, 2014). In the Netherlands, this new approach expresses itself by transferring more responsibility concerning the Energy Transition to the municipalities. In 2019 the Vereniging Nederlandse Gemeenten (VNG) unanimously voted in favor of the Climate Agreement. The agreement includes the mentioned responsibility shift and the obligation of integrating citizen participation trajectories (Gemeenten en het Klimaatakkoord, 2019). The integration of citizen participation is in line with the vision of the European Commission (2015),

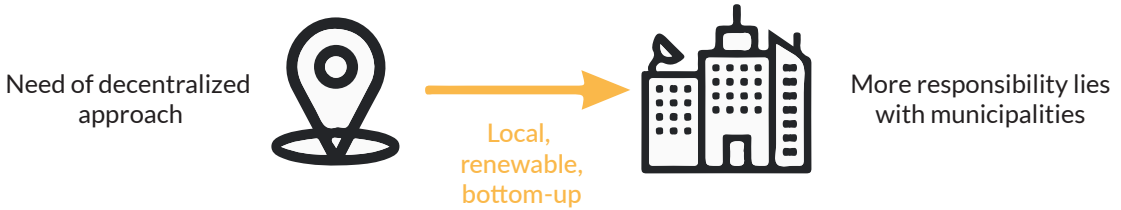


Figure 1: The current situation of the Energy Transition.

which states that citizens should be the core of the Energy Transition where they take ownership and benefit economically.

Looking at the municipality of The Hague, their Urban Energy Plan includes the ideas concerning the Energy Transition and involvement of the citizens and entrepreneurs of the city. Although this document is called a 'plan,' the municipality still struggles regarding clear task division, action points, and policies for the coming years. The document is mainly a vision document (Gemeente Den Haag, 2020). This document is precisely the point where the challenge gets complicated for the municipality of The Hague and other municipalities. According to the civil servants, the translation from vision to practice is complex (Becker Hoff and van den Tol, 2021). The Energy Transition program of The Hague is standing for a difficult assignment. It is not strange that practice is challenging since this form and size of the transition are entirely new for the municipality to take care of. The timeframe of the transition is long-term and covers multiple coalition periods. Since, plans are each time made for four years ahead is is also hard for the municipality to respond flexibly to change. In addition, however, the government is working on abolishing some of these rules and regulations, municipalities have many cumbersome rules and regulations (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2018).. For example, because the activities of many different teams are interconnected and therefore influence each other.

To further elaborate on the difficulty of bringing the Energy Transition into practice in The Hague, one could argue two possible explanations. Firstly, looking at the essential step of the Energy Transition, namely energy-saving, the Netherlands has been working on awareness around this subject for 40 years, and it is time for behavior change, only the citizens miss action perspective (Rotmans and Linden, 2014). A national collective top-down approach is no longer suitable for behavior change but a societal bottom-up approach since this transition needs to be backed-up by every citizen. The bottom-up initiatives form an unorganized chaos which is elusive for the energy regime, and results into triggered and focussed energy companies (Rotmans and Linden, 2014).

Furthermore, the municipality of The Hague faces a large variety of economic interests and a large variety of social and environmental interests. The contexts to consider are not only the political and economic contexts but also the environmental and socio-cultural context. Therefore, the Energy Transition is a highly complex sustainable issue. This socio-cultural context includes public perceptions, roles, traditions, feelings of social justice, and identities, which can all contribute to joint action (Schaffrin and Fohr, 2016). The need for this multi-context approach coincides with the fact that the issues related to urban sustainability require framing that connects with other local challenges in the social, economic, and ecological area (Frantzeskaki and Rok, 2018). These different interest areas and contexts make the Energy Transition need customization according to the strategies and solutions. The citizens of The Hague can play an essential role in getting a hold of the interests and context.

Secondly, at the end of 2020, the municipality of The Hague sold its Eneco shares. This sale created a cash flow of no less than 675 million Euros to the municipality of The Hague (M. Brakema, 2019). They said that a large part of this

money would be invested in the Energy Transition within the municipality. At long last, this investment was fixed at an amount of 180 million Euros (Gemeente Den Haag, 2020). At first sight, a considerable amount of money, with which a lot is possible. Unfortunately, the opposite is true. If we only look at the Transition Vision of Heat already a problem arises. This vision aims to transform all neighborhoods in The Hague into natural gas-free homes. According to the Dutch Environmental Assessment Agency, an investment of 15.000 Euros is required to make a house natural gas-free (NOS, 2019). If you consider that there are 270.000 households in The Hague, you can quickly speak of an amount of about 4 billion Euros. Therefore, the public servants of The Hague see the investment of 180 million Euros as a' drop in the ocean' (Becker Hoff and van den Tol, 2021). Because of these high investment costs, one could argue that monetary investments and subsidies alone cannot solve the entire Energy Transition in The Hague. That is why the Municipality of The Hague must collaborate with its citizens to solve the Energy Transition. The citizens are not only needed to share in the investment costs but also to work together with companies to innovate and develop new solutions and possibilities for their neighborhoods.

The citizens of The Hague can be of help for both the two reasons mentioned above. At the moment, recent research states that citizens feel locked out of the Energy Transition decision-making process and that the current energy system limits initiatives and change (Lennon et al., 2019). Altogether, there is a call for more participatory democracy and the active inclusion of citizens in the issues and decision-making (Cuthill & Fien, 2005). This call is in line with the implementation of citizen participation proposed in the Climate Agreement of VNG.

1.2 CITIZEN PARTICIPATION

It is essential to comprehend citizen participation to better understand the subject of this research, namely the involvement of citizens in the Energy Transition in The Hague. Citizen participation is the cornerstone of democracy, the so-called 'do democracy' (Cuthill and Fien, 2005; Soares da Silva and Horlings, 2019). In the past, critics defined the character of participation as tokenism since it was used mainly by politicians to legitimize their plans and policies driven by legal requirements. Since more and more people feel a gap between themselves and democratic institutions, citizen participation is gaining support to extend democracy (Binnema and Michels, 2021). However, the focus is also broadening to engage citizens and other stakeholders in idea creation and assessing strategies and solutions (Frantzeskaki and Rok, 2018).

Citizen participation could stimulate the balance between political power and counterforce. It is supported by the idea to think beyond service delivery when serving the citizens of a municipality or country. Citizens are more than the customers of public servants. The public service system is based on responsibility, and therefore citizens are the owners of the system and the employers of the public servants (Cuthill and Fien, 2005). Furthermore, citizen participation is vital and essential for the Energy Transition (Koirala et al., 2018; Soares da Silva and Horlings, 2019). Citizen participation results in a new collaboration between citizens and government defined as co-production or co-creation.

Since the participatory approach is a form of co-production, it is about facilitation and collaboration rather than power distribution. It is crucial to

remember that citizen participation makes cities and economies stronger and is not a compromise but an enrichment (Pena et al., 2017). The goal is not to let the citizens take over the responsibility, but to actively involve them in the decision-making process and execution through co-creation. So, the facilitation and collaboration is part of a new dual role for the local government, existing besides general service providing.

1.3 CITIZEN INITIATIVES IN THE ENERGY TRANSITION

Another essential subject regarding citizen involvement is citizen initiatives. Citizen initiatives are about citizens taking matters into their own hands and creating their living environments (Soares da Silva and Horlings, 2019). There are multiple advantages according to citizen initiatives. Local solid knowledge in community networks makes it easier to reach common goals by creating rules and structures. Further, citizens have a strong motivation for action since they are directly affected by the problems and social changes (Schaffrin & Fohr, 2016).

A local energy initiative is a specific type of citizen initiative active in the Energy Transition. It is defined as a visible, ongoing development focused on the decentralized generation of renewable energy. Still, it can also contribute to the Energy Transition by community building, organizing protests, providing expertise, and promoting sustainability and energy conservation (Soares da Silva & Horlings, 2019; Wagemans et al., 2019; Arentsen & Bellekom, 2014). Furthermore, the local energy initiatives help empower local actors to share knowledge to create and scale solutions and participate in policymaking (Frantzeskaki and Rok, 2018). The local energy initiatives are the opposite of the central electricity systems. The central system has integrated coordination, a centralized technology, and an individualized performance; the initiatives have autonomous coordination, localized technology, and community performance (Arentsen & Bellekom, 2014). However, one finds a variety in form and orientation among the initiatives. In addition, the research of Wagemans et al. (2019) states that "community energy initiatives play an important role in overcoming challenges of uneven economic development, inequality, and fuel poverty." The local energy initiatives often use existing technology instead of developing new technologies and innovate in the form of new patterns of using and producing these technologies, social relations, normative and cultural structures, and methods to fulfill societal needs (Pesch et al., 2019). Therefore local energy initiatives are seen as social innovations rather than technological innovations. More information on local energy initiatives can be found in Appendix 1.

1.4 SCALING CITIZEN INVOLVEMENT THROUGH CITIZEN INITIATIVES

If we look at citizen participation in The Hague, we can find two pathways towards citizen participation or, in other words, the connection between the municipality and the citizens as shown in Figure 2. Firstly, they can reach each other directly via participation trajectories. Secondly, they can contact each other indirectly via citizen initiatives. These two pathways are different, if only already, because of the level of implementation. The citizen initiatives are active on a neighborhood level, while the participation trajectories can be on a city, district, or neighborhood level. Overall, current research states that local energy initiatives can be a promising solution for the Energy Transition

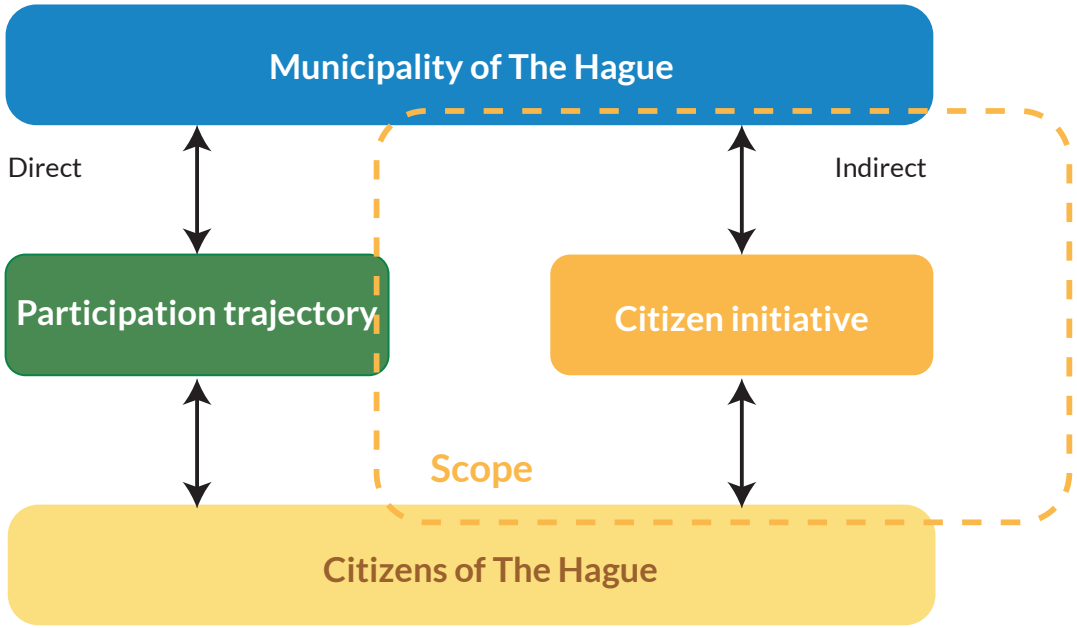


Figure 2: The two pathways towards citizen participation or seen as the two possible connections between the municipality and the citizens of The Hague including the scope of this research.

(Bauwens & Defourny, 2017; Koirala et al. 2018; Wagemans et al., 2019). In addition, social innovations are even seen as vital for the Energy Transition. Therefore, the local energy initiatives form the scope of this research. The initiatives are part of a bottom-up approach, where citizens make themselves heard.

When looking at citizen participation, it is all about listening to citizens, their opinions, interests, and challenges within neighborhoods. The European Commission and VNG are currently creating top-down pressure to increase citizen participation in the Energy Transition. At the same time, the bottom-up local energy initiatives are evolving and developing. Because of these two developments, these parallel activities form the point where an opportunity occurs for these two to come together. The top-down strategic pressure can meet the bottom-up local energy initiatives. Manzini (2014) refers to this meet-up of top-down and bottom-up as hybrid processes. This collaborative participation in the public domain can also be referred to as 'Participatory Domain' as explained by Mulder (2014). In the current situation, this connection is not yet utilized. Therefore, why not talk about it as a 'Societal Space' that has arisen but not yet been used for its potential as shown in Figure 3. This top-down pressure is meeting the bottom-up local energy initiatives in this 'Societal Space,' which refers to the potential of working together and creating these hybrid processes. However, the potential of this 'Societal Space' still needs to be exploited, and the connection between these two concepts, namely local energy initiatives and citizen participation, is therefore interesting. The relationship is about matching the listeners to the ones who want to get heard. Research is needed to discover the potential of local energy initiatives to contribute to the increment of citizen participation in the Energy Transition in The Hague.

The potential of the 'Societal Space' has to do with the connection between top-down and bottom-up and if this connection is impactful. This connection is about the relationship between the municipality and the citizen initiatives (see Figure 4). At this moment, the participation strategist of the Energy Transition program of the municipality of The Hague states that there is no clear and defined way to interact with the citizen initiatives. Other civil servants working with the initiatives recognize this. There is no unity among the civil servants who interact with the initiatives. So, each of them has their view on the situation and their way of acting on it. This results in an inconsistent interaction between the municipality and the initiatives and, therefore, confusion. Thus, the participation strategist, together

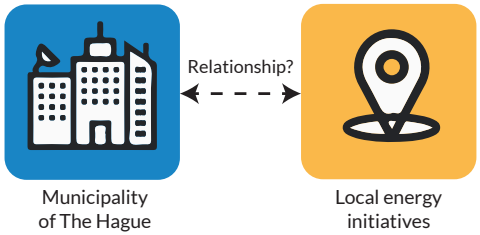


Figure 4: The relationship between the municipality and initiatives is still unclear and undefined

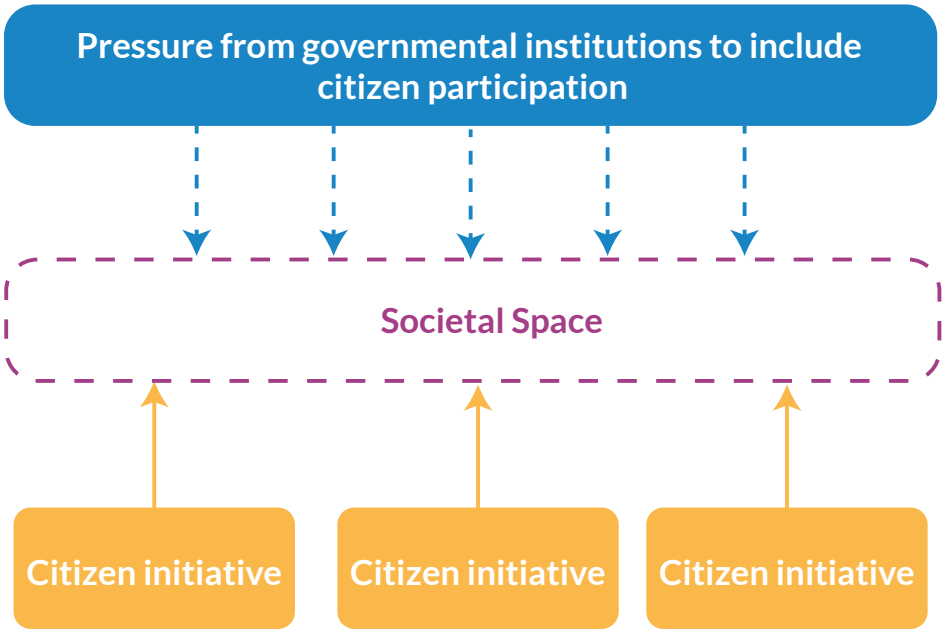


Figure 3: The 'Societal Space' as a result of simultaneous pressure from top-down and bottom-up approaches.

with other civil servants of the Energy Transition program, will reposition the citizen initiatives in the Energy Transition. The repositioning helps to create a strategy for handling the initiatives and a more explicit relationship. For this repositioning to be a success, it is necessary to have information on the current role of the initiatives in The Hague. In addition, a view into the initiatives' possible positions, the municipality's required role, and their support are needed.

1.5 A SPECIFIED ROLE FOR THE MUNICIPALITY IN THE CONTEXT OF THE HAGUE

This research will provide knowledge on the current role and position of the local energy initiatives in The Hague and the potential of their contribution to citizen

participation in the Energy Transition. Furthermore, it will give insights into the expected role and support of the municipality. Current research provides a more general role description for the municipality. For citizen initiatives in general, the local government has a facilitating role (Bakker et al., 2012). In the area of local energy initiatives, policymakers need to focus on the empowerment of local communities and the increasing willingness of citizens (Koirala et al., 2018). Several studies return to the question about approaches, interventions, policies, methods, and instruments involved with local energy initiatives. It is not clear yet, which ones are effective, have an impact, and may lead to success and the stimulation of citizen participation (Bakker et al., 2012; Bauwens, 2016; Hoppe and de Vries, 2018; Soares da Silva and Horlings, 2019). Frantzeskaki and Rok (2018) state that the local government needs to respect the autonomy of local energy initiatives and their time, effort, and resources to contribute. There is a need to look for ways to compensate and acknowledge the initiatives by the local government. Besides, one needs to handle the organization around the initiatives and bundling power with care. When people start organizing 'just to organize,' there is the danger of being sucked back into the energy regime and losing the radical character of the initiatives (Rotmans and Linden, 2014). In addition, the local energy initiatives need to be handled is a sensitive matter. The initiatives can become vulnerable because of their limited resources and unbalanced exposure and demands (Frantzeskaki et al., 2016a). At last, the local energy initiatives benefit from a reliable and consistent government (Rotmans and Linden, 2014).

However helpful, these descriptions of the role of the local government are still general. This research is focused on the city of The Hague. The available role descriptions are not specific enough to provide the municipality of The Hague with complete and deep insights. There is a need for customization because of the complexity of the Energy Transition, the decentralized approach, and the involvement of economic, social, and environmental interests of multiple different stakeholders. Therefore, more specific research in the context of The Hague and its initiatives is needed to provide complete and deep insights and specify the expected role and support of the municipality of The Hague.

To conclude, this research will look into the connection between citizen participation and local energy initiatives and how the initiatives and municipality can collaborate to stimulate citizen participation in the Energy Transition in The Hague. The municipality of The Hague plays a significant role in this connection. There is a top-down pressure to integrate citizen participation in the Energy Transition, and consequently, the municipality is the designated party to take the lead. This results in the following research question:

How can the municipality of The Hague increase the citizen participation in the Energy Transition through local energy initiatives?

1.6 THE ENERGY TRANSITION PARTICIPATION TEAM OF THE MUNICIPALITY

The client of this research is the participation strategist of team Transformation. This role is fulfilled by Esther Becker Hoff. The Transformation team is one of the four teams of the Energy Transition program of the municipality of The Hague. Team Strategy & policy and team Preparation & planning are the other

teams. The fourth team, team Execution, is not yet active. Esther is working together with the team Strategy & policy on the strategy concerning participation in the Energy Transition. This participation strategy includes local energy initiatives. She also works together with team Preparation & planning because they are in contact with the local energy initiatives. Also, this team works with the participation strategy set up by Esther.

Later in this project, Nana Slof joined Esther as the new participation area manager. Nana also got involved in this research as a client from that moment. Furthermore, Nick van den Tol is engaged in the research as well. He is part of Haags Samenspel. This team is working on citizen participation municipality-wide. Nick has a more advisory role than a client role. Also, his involvement is far less than the involvement of Esther or Nana. An overview of the client, closely involved stakeholders and their connection is shown in Figure 5.

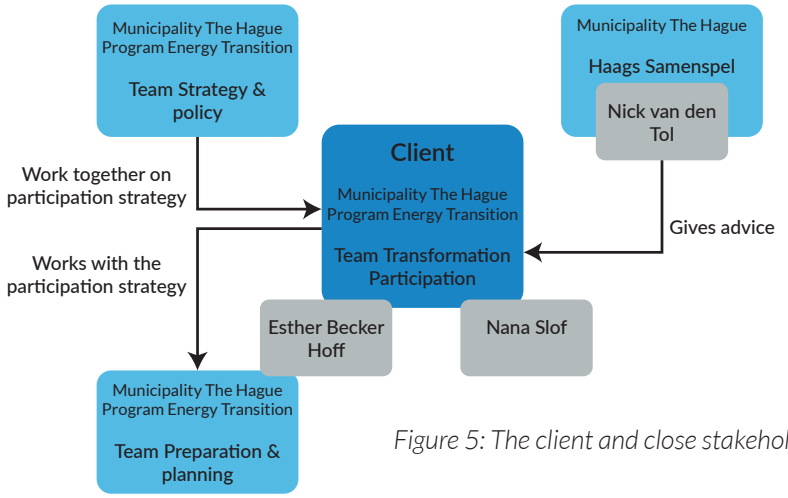


Figure 5: The client and close stakeholders.

1.7 PREPARATORY RESEARCH

Concluding, this research aims to find ways in which the municipality can increase citizen participation through local energy initiatives. Before researching and answering the main research question, some preparatory research was preferred to set the scene. This preparatory research is used to get a better understanding of the research subject. This research zooms out to the context of the research question, and therefore explores relevant theoretical concepts to study local energy initiatives in a transition context and the entire stakeholder ecosystem of the local energy initiatives. Hereto, the preparatory research answers the following two research questions:

1. *How to investigate local energy initiatives in the transition context?*
2. *What does the stakeholder ecosystem for local energy initiatives look like in The Hague?*

The preparatory research is based on a literature review, desk research, client meetings, observations, and several exploratory interviews with stakeholders. The following two chapters cover the preparatory research. Within Chapter 2 the answer to the first preparatory research question is presented. Besides, in Chapter 3 the answer to the second preparatory research question can be found. The research approach regarding the main research is explained in Chapter 4.

2. RELEVANT THEORETICAL CONCEPTS TO RESEARCH LOCAL ENERGY INITIATIVES

This Chapter includes literature and theoretical concepts which are relevant to the research question and context. It is important to know about these theoretical concepts to better understand the context of the research and to develop a way to research the local energy initiatives. In the first place, the concept of Citizen Participation is directly mentioned in the research question. Therefore, it is essential to elaborate on this concept. The theoretical background of Citizen Participation is presented in Section 2.1. Secondly, local energy initiatives are innovating from a social perspective rather than a technical perspective. They innovate to fulfill societal needs. Therefore, local energy initiatives are social innovations and it is relevant to know more about the functioning of social innovations. The theoretical background on Social Innovation is presented in Section 2.2. The third concept concerns researching social innovation in a transition context. A literature review on transition theory is conducted. There are multiple theories, and not every theory is suitable for researching local energy initiatives. The review, choice, and explanation are presented in Section 2.3. Lastly, the third phase of this research is based on a design process. During the design process, it is preferred to include both the perspectives of local energy initiatives and the municipality. The focus of Participatory Design is to 'organize projects with identifiable stakeholders within an organization, paying attention to power relations and providing resources with a view to the empowerment of weak and marginalized groups' (Simonsen & Robertson, 2013). Designers should be the facilitators of the design process, support the development of solutions and later make them attainable (Jégou & Manzini, 2008). Therefore, Participatory Design is strongly connected to open peer-production arenas from living labs to social innovation in the public sphere resulting in a strong connection between Participatory Design and the concepts of local energy initiatives and Citizen Participation. Furthermore, the ethical motivation of Participatory Design is suiting the motivation for Citizen Participation. The motivation within the participatory design is 'to support and enhance how people can engage with others in shaping the world' (Simonsen & Robertson, 2013). This has some similarities with Citizen Participation in that Citizen Participation enables citizens to shape their living environment together with civil servants and other power owners (Arnstein, 1969). To conclude, the concept of Participatory Design is relevant, suitable and helpful for this research. An elaboration on Participatory Design is presented in Section 2.4.

2.1 CITIZEN PARTICIPATION

Citizen participation starts with looking at democracy. Democracy can be divided into direct and indirect democracy. Indirect democracy is a representative democracy with elected people that act in the interest of the citizens and the state (Callahan, 2007). Direct democracy is the opposite, where citizens are the owners and make the decisions for the state (Callahan, 2007; Cuthill & Fien, 2005). Direct democracy is connected to citizen participation and needs an involved and engaged community. Citizen participation is different from

political participation and civic engagement. Political participation is about, for example, voting for representative leaders, and civic engagement is about supporting a community by, for example, volunteering work. If citizen participation is discussed, it is seen as participation that directly impacts the formulation and implementation of policies where citizens are an integrated part of the entire governance process (Callahan, 2007). Citizen participation is the redistribution of power, enabling citizens to induce social reform (Arnstein, 2019). This new governance is often called the 'new public governance' and can be seen as a reaction to dissatisfaction and decreased trust towards the indirect, representative democracy (Jäntti & Kurkela, 2021). Therefore, citizen participation could increase this trust and inclusiveness, especially in municipalities. In addition, it could broaden the knowledge base of the decision-making process.

Citizen participation can come in many forms and have three central functions. Participation has an educative function in developing civic skills. The integration function creates feelings of belonging and community and functions of the legitimacy of the choices made according to proposed solutions (Jäntti and Kurkela, 2021). To create representative democracy by citizen participation, it is essential to be inclusive. Well-educated citizens are overrepresented (twice as active) in e-participation, interactive policy-making, and citizen governance, meaning the higher the education, the more likely people are to participate (Binnema and Michels, 2021). The overrepresentation of higher educated people has consequences since lower and higher educated people differ in attitude and preferences. Higher educated people trust politics more, are more satisfied with the representative form of politics, and have a more global, environmental, and multi-cultural view. Further, lower educated people are less competent and successful in putting their issues of interest on the political agenda. Therefore, the wishes and interests of the lower educated people may be neglected, which influences the legitimacy of citizen participation (Binnema and Michels, 2021).

2.1.1 Levels of citizen participation

Within citizen participation, eight levels are distinguished based on the participation ladder of Arnstein (1969), which is still relevant since it was republiced in 2019 (see Figure 6). The first two levels, namely manipulation, and therapy are defined as non-participation. These two levels are used as a substitute for participation. They are not about enabling people to participate but about educating them by powerholders (Arnstein, 1969). Therefore, these two levels are not qualified as 'actual' participation. Levels four and three are informing and consultation. These levels make the citizens hear and be heard, providing them with a voice. However, these two levels lack the assurance of changing the status quo (Arnstein, 1969). The levels are therefore called tokenism. Placation is a higher level of tokenism, but still, the citizens can only advise, and the powerholders decide. When continuing, the next level is a partnership, the first level of citizen power. Within this sixth level, the citizens can negotiate and engage in trade-offs. The highest levels, namely delegated power and citizen control, are about having at least the majority of the decision-making seats or full power (Arnstein, 1969). Where non-participation and tokenism forms were still top-down approaches, the citizen power form tilts towards the bottom-up, including themes like inclusiveness, collectivity, and autonomy (Gohari et al.,

2020).

Since this ladder involves eight degrees with slight differences as shown in Figure 6, it could be too specific or complicated to use within a research framework. Therefore, the simplified ladder used by Quist (2007) is also presented.

To translate this to this research context:

- Low participation or degree of non-participation: the citizens are informed of the plans of other stakeholders (mainly the municipality) and about the Energy Transition in general by the local energy initiatives.
- Moderate participation or degree of tokenism: the citizens consult other stakeholders (mainly the municipality) about developing their plans via or because of the local energy initiatives.
- High participation or degree of citizen power: the citizens have control and own plans or are part of a partnership with stakeholders to co-create plans (mainly the municipality) via or because of the local energy initiatives.

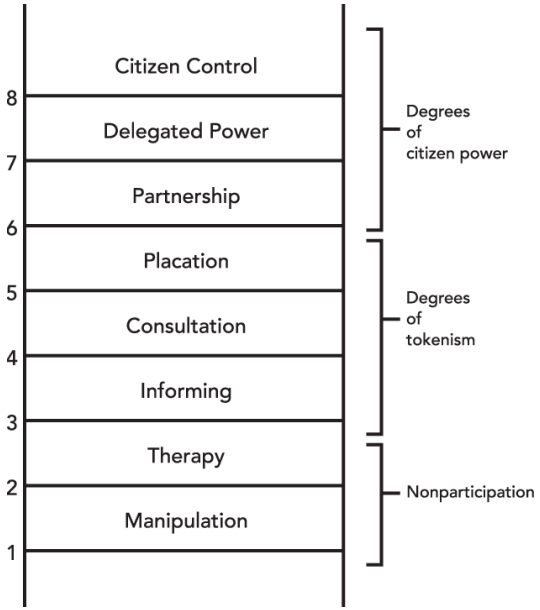


Figure 6: Ladder of citizen participation (Arnstein, 1969)

2.2 SOCIAL INNOVATION

Innovation is manageable, supportable, and nurtured instead of based on luck (Murray et al., 2010). Social innovation has shown that most social change combines top-down and bottom-up Social innovations are 'new ideas that work in meeting social goals' (Murray et al., 2010). Pel et al. (2020) redefined social innovation as a 'qualitative property of ideas, objects, activities or (groups of) persons, who can be considered socially innovative to the extent that they contribute to changing social relations.' The redefinition has to do with avoiding assumptions about origins or divers. Social innovation covers many different dimensions, namely cultural, political, psychological, economic, technological, ecological, and spatial (Pel et al., 2020). Further, social innovations propose new ways of doing, organizing, framing, and knowing by reconfiguring social practices, institutions, and networks (Pel et al., 2020). Where technological innovations have primarily financial and business drivers, social innovations are more concerned about the well-being of people (Hoppe, de Vries, 2018). When looking from a multilevel perspective, social innovations respond to unsustainable regimes (Seyfang, Haxeltine, 2012).

Social innovation initiatives are local experiments with social goals using a different socio-economic structure (Pesch et al., 2018). Social innovation initiatives are important pioneers in social innovation; however, they are fragile entities, and depending on the social innovation 'ecosystem' they are embedded in (Pel et

al., 2020). They can be divided into three categories, namely: 1) grassroots social innovations, 2) broader-level initiatives, and 3) systemic type initiatives (Haxeltine et al., 2013).

2.2.1 The six stages of social innovation

Murray et al. (2010) presented the spiral model to describe the six stages of social innovation as shown in Figure 7. The six stages cover 'start to impact.' The phases are not always happening fully chronically or sequential, and feedback loops occur between them. However, they can be helpful when considering the different kinds of needed support when making social initiatives grow.

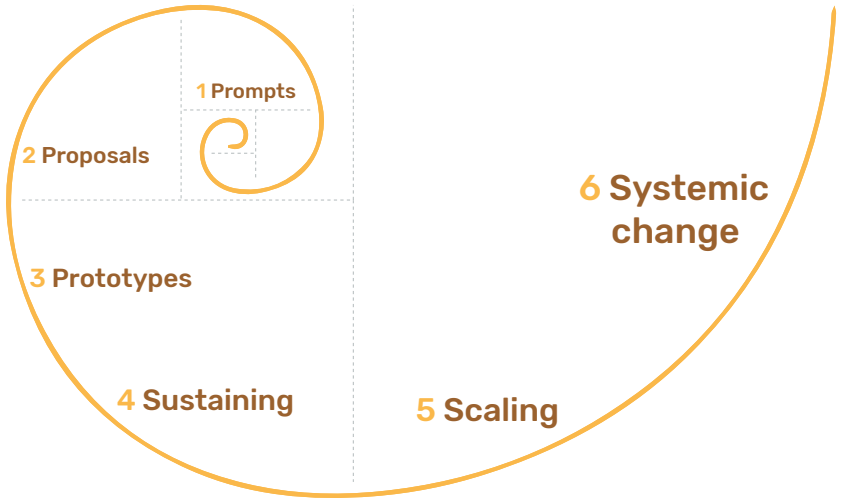


Figure 7: The spiral model by Murray et al. (2010)

1. Prompts, inspirations, and diagnoses: This stage includes the factors that highlight the need for innovation and the inspirations that spark it. Further, framing the question in a good and complete way is essential in this stage.
2. Proposals and ideas: This stage is based on idea generations.
3. Prototyping and pilots: This stage is meant to test the ideas in practice. The testing is done by pilots, prototypes, or trials iteratively.
4. Sustaining: This stage is about sharpening ideas and making them financially viable or even fixing legislation. In this way, they can become everyday practice.
5. Scaling and diffusion: Within this stage, the innovation will be grown and spread by emulation and inspiration.
6. Systemic change: The last stage in the ultimate goal of social innovation. Systemic change involves a new way of thinking and doing things, including social movements, business models, laws, regulations, and infrastructures. Often the public sector, private sector, grant economy, and household sector will all be influenced by the change for an extended period.

2.2.2 Social innovation initiatives in the Energy Transition

When looking at social innovation in the Energy Transition, we see a change in

attitude and behavior (Hoppe, de Vries, 2019). The community of renewable energy cooperatives grows as a response towards policy development in the energy market (Hoppe, de Vries, 2019). Social innovation in the domain of the energy transition is seen as an innovation with social means, citizen empowerment, contribution to the low-carbon transition, and people's well-being (Hoppe, de Vries, 2019). Further, they seek other goals like citizen empowerment, energy poverty, energy justice, and social equality (Hoppe, de Vries, 2019). Local energy initiatives belong to the header' social innovation'. Local energy initiatives belong to the systemic type initiatives. This type encourages systemic change and tries to recreate society in a more participative arena' (Haxeltine et al., 2013).

A local energy initiative is a specific type of citizen initiative, and a visible, ongoing development focused on goals associated with the energy sector, mainly decentralized renewable energy generation (Soares da Silva & Horlings, 2019) (Wagemans et al., 2019). Further, the organization should be done by civil society actors (Ghorbani et al., 2020). Local energy initiatives are supportive regarding the acceptance, adaptation, and scaling of renewable energy (Ghorbani et al., 2020). Besides time and financing, skills and expertise in management, communication, accountancy, and funding applications are important for developing local energy initiatives and local or tacit knowledge and technical knowledge (Warbroek et al., 2018). The embeddedness in the local social norms, practices, and relations, identity, and culture influence the legitimacy of the initiative, which influences resource accessibility and organizational survival (Warbroek et al., 2018).

2.3 RESEARCHING LOCAL ENERGY INITIATIVES IN A TRANSITION CONTEXT

Transition theory is helpful when studying the context of the Energy Transition. The Multilevel perspective of Geels (2006) is seen as a fruitful framework to analyze the transition towards sustainability. This framework looks at the dynamic systems that are currently present on the macro (landscape), meso (regime), and micro (niches) levels. It focuses on technical innovations arising out of technological niches. As earlier described, the local energy initiatives are social innovations. This means that they innovate in new ways of doing, knowing, framing, and/or organizing instead of new technologies (Haxeltine et al., 2016). The multilevel perspective has proven to apply to social innovations on the condition that these social innovations can lead to a system change and have a competing or symbiotic relationship with an existing regime (Hölsgens et al., 2018). However, Haxeltine et al. (2016) developed a transition theory framework specifically suitable for social innovations, namely Transformative Social Innovation. This framework is based on the Multilevel Perspective of Geels. They state that the Multilevel Perspective provides a starting point but does not include the relational approaches needed to understand the relationship of social innovations with the systemic context (Haxeltine et al., 2016). Because of the better fit with Social Innovation, the Transformative Social Innovation framework is used as Transition theory within this research. The Transformative Social Innovation theory is explained below. A more elaborate explanation of the Multilevel Perspective can be found in Appendix 2.

2.3.1 Transformative Social Innovation in detail

The model of Murray et al. (2010) explicitly focuses on the actions and development of social innovation itself and therefore shows an optimized one way flow. However, according to Pel et al. (2020) social innovations depend on multiple relations. Pel et al. (2020) focus on theses relations of social innovation on higher abstraction levels. Therefore, the social innovation process should be viewed with a multilevel perspective. Pel et al. (2020) divide the transformative social innovation process into four different processes, each taking place on a higher level as shown in Figure 8.

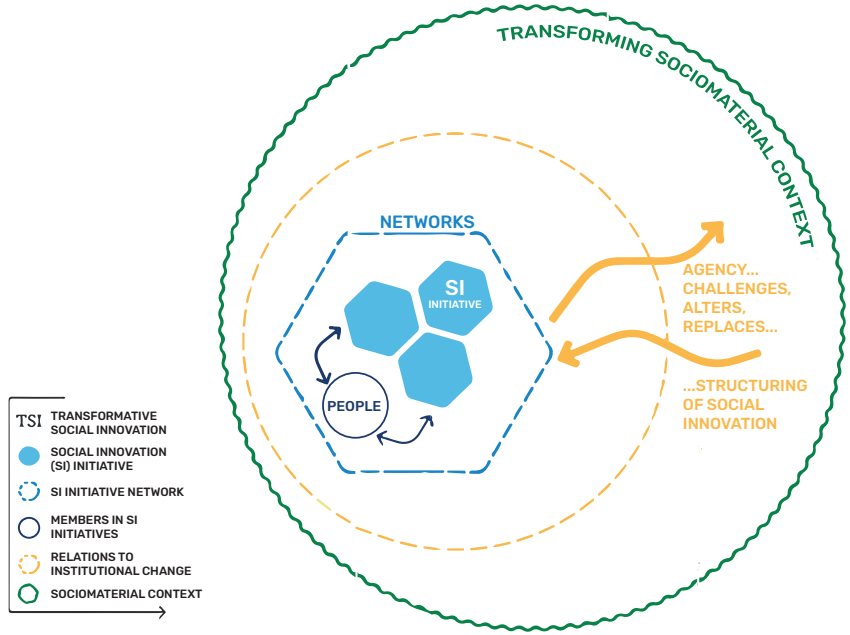


Figure 8: The four relations of transformative social innovation by Pel et al. (2020)

The TSI theory is built out of four relations:

1. Relation within social innovation initiatives
2. Relation between social innovation initiatives and networks
3. Relation between social innovation and institutional change
4. Relation between social innovation and socio-material context

Within social innovation initiatives as well individual empowerment and collective empowerment are relevant. This empowerment has to do with achieving goals, some degree of impact, and meaning. Further, people want to feel relatedness, autonomy, and competence. The initiatives can be seen as collectives of individuals. The initiatives themselves can be looked at in the same way. The links between different initiatives are crucial in every transformation innovation theory. The social innovation initiatives enter themselves in social innovation ecosystems, which also could be seen as social innovation niches.

These ecosystems arise through the need for resources like accommodation, subsidies, legitimacy, or support through membership. Within such an ecosystem, there is a search for a collective political voice, shared identities, and a shared narrative of change. The initiatives together feel that they are part of a social

movement. Further, the resonance of ideas within multiple initiatives supports the formation of a social innovation ecosystem.

On the one hand, social innovation initiatives challenge the 'dominant institutions' or 'status quo. On the other hand, they are working with the same complex system of negotiated rules and cultures already existing (Pel et al., 2020). This 'status quo' and set of rules can be seen as the current regime (Geels, 2006). Institutions provide identities, roles, arrangements, and ways of thinking to help people understand the world, make choices and take action. The initiatives are connected to formal and informal institutions. The challenge, alter, or replace dominant institutions.

The origin of social innovation initiatives can be found in broad societal trends (game-changers) and developments happening on niche and landscape levels. Not only the capitalistic society has been of influence, but some other explanations are also the ICT revolution, the rise of a societal network, the rise of persuasive marketization, the rise of demand for autonomy, a shift towards a knowledge economy, and the individual quest for purpose, belonging and self-direction (Pel et al., 2020). Further, social innovation can be seen as an emancipating concept that arises from a multidimensional, socio-material context.

These four relations can result in transformative change. Transformative change is 'the process of challenging, altering, or replacing dominant institutions in a specific socio-material context' (Haxeltine et al., 2016):

- to challenge: questioning the legitimacy or existence of dominant institutions (doing, organizing, framing, knowing)
- to alter: changing and or supplementing dominant institutions
- to replace: refers to replacing dominant institutions with new institutions

Transformative change is about institutional change and changing societal rules. Transformative change is a continuous adjustment in societal values, outlooks, and behaviors. When challenging, altering, or replacing a dominant institution, it becomes a transformative change. Examples of broad societal transformations are the industrial revolution, European integration, and the rise of the market economy (Haxeltine et al., 2016).

Social innovation is a concept involving a diverse group of agents of social innovation (SI agents). These SI agents can contribute to transformative change through transformative ambition, potential, and impact (Haxeltine et al., 2016).

- Transformative ambition: vision, aims, mission statement to achieve/contribute to an identified transformative change
- Transformative potential: qualities to challenge, alter, and/or replace dominant institutions in a specific socio-material context
- Transformative impact: evidence of having achieved a transformative change

2.4 PARTICIPATORY DESIGN

Over the years, the involvement of users within the design process has become more mainstream. One could think about user-centered design, user-driven innovation, and user-experience design. However, there is still little room for others besides designers in the design team.

This is different for participatory design. As in the name, it is about participation and specifically about the participation of users and other stakeholders in the design process. Participatory design is 'hands-on democracy in action (Pena et al., 2017). The process includes shaping and reshaping civic landscapes. The people included in the processor, in other words, the people participating, will consider immediate needs and long-term consequences. Therefore, Participatory Design is very suitable for tackling sustainable problems.

Furthermore, Participatory design is about changing situations (Simonsen & Robertson, 2013). The general structure of reasoning is about the 'what' in combination with the 'how,' which leads to a particular 'outcome' as shown in Figure 9. Within the design community, there is often a focus on the 'what' of design. This problem-solving strategy leads to the design of an object, service, or system. This is called normal abduction as shown in Figure 10. The participatory design focuses on the 'how' of design (Simonsen & Robertson, 2013). The 'how' of design is about the 'pattern of relationships.' This is called design abduction as shown in Figure 10. The starting point of design abduction is the desired value we want to achieve (Dorst, 2015).

The participatory design or co-design is all about engaging and involving the stakeholders in the design process. This is often done by organizing one or multiple workshops with these stakeholders (Stickdorn et al., 2018). Workshops are structured in three phases: pre-phase, main phase, and reflection (Stickdorn et al., 2018). The pre-phase includes the introduction of the subject, filling in information gaps, and presenting the expectations and goals of the project and the workshop itself. The main phase includes assignments to trigger them and gain insights. This phase is about generating ideas, iterating, letting participants develop their voices. The last phase is to get a reflection of the workshop participants and if they gained some insights for themselves. The output (achievement) is visible.

Figure 9: The general structure of a reasoning process (Dorst, 2015).

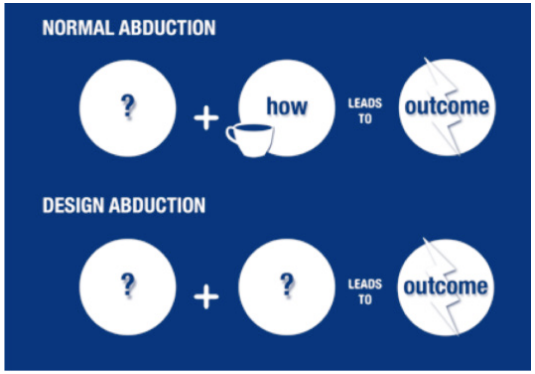


Figure 10: Normal abduction and design abduction (Dorst, 2015).

2.5 FOUR RELEVANT THEORETICAL CONCEPTS

This part of the preparatory research aimed to discover relevant and helpful theoretical concepts when researching local energy initiatives. In the first place Citizen Participation is investigated, because of the direct connection to the research question. This resulted in the discovery of eight different levels of citizen participation which can be divided into low, moderate and high. Secondly, the concept of social innovation was highlighted. The local energy initiatives function as social innovations since they innovate in social ways rather than technical ways. An explanation of the concept social innovation is presented and the ways these innovations develop. Thirdly, there is looked into a way to research social innovations and therefore local energy initiatives in a transition context. The Transformative Social Innovation framework of Pel et al. (2020) seemed most suitable. This framework is based on four types of relations which combined for the transformative social innovation process. Lastly, the concept of Participatory Design was presented. This concept is especially useful to include both the local energy initiatives perspective and the municipality perspective within this research. The inclusion of these perspective will lead to more suitable outcomes of this research. Overall, each of the four concepts is relevant and will be used in the further course of this research.

3. THE COMPLEXITY AND ISSUES OF THE STAKEHOLDER ECOSYSTEM

This chapter includes a stakeholder ecosystem analysis of the local energy initiatives. The stakeholder ecosystem is essential to better understand the context of local energy initiatives, their stakeholders and their relationship with these stakeholders. Furthermore, it is interesting to look how to the total ecosystem works together and be aware of the current issues.

The methods for this stakeholder ecosystem analysis are presented in Section 3.1. Thereafter, the results are shown in Section 3.2, 3.3, 3.4, 3.5 and 3.6. Section 3.2 is a collection of all the involved stakeholder including a short description. As follows Section 3.3 provides an explanation on the involvement of the stakeholders and Section 3.4 on the power/interest distribution among the stakeholders. Then Section 3.5 shows the overview of the total ecosystem. Finally, the key insights on the issues within the ecosystem are presented in Section 3.6.

3.1 METHODS

The stakeholder ecosystem analysis is based on desk research, client meetings, observations and multiple unstructured and semi-structured exploratory interviews with stakeholders. The exploratory interviews were conducted with some employees of Duurzaam Den Haag, several local energy initiatives in The Hague and a number of civil servants from different teams of the Energy Transition program of the municipality of The Hague which can be seen in Table 1. The questions of the semi-structured interviews can be found in Appendices 3 and 4.

Organization	Name	Type of interview
Initiative: Vruchtenbuurt	-	Semi-structured
Initiative: Benoordenhout	-	Semi-structured
Initiative: Bomen- en Bloemenbuurt	-	Semi-structured
Initiative: Rivierenbuurt/Spuikwartier	-	Semi-structured
Initiative: Heesterbuurt	-	Semi-structured
Municipality: Voorbereiding & Planvorming (ETP)	Claire Daniels	Semi-structured
Municipality: Voorbereiding & Planvorming (ETP)	Harmen de Vrede	Semi-structured
Municipality: Strategie & Beleid (ETP)	Henry Terlouw	Semi-structured
Duurzaam Den Haag	Anouk Dehue	Unstructured
Duurzaam Den Haag	Lennart van der Linden	Unstructured

Table 1: Overview of interviewees

Furthermore, a meeting about the Heat Transition Vision was attended. This meeting was meant for the local energy initiatives in The Hague, but some civil servants were also present. Duurzaam Den Haag hosted the meeting to provide a more objective lead in the discussion. It seems interesting to join this meeting because I could observe the interaction between the initiatives and their relationship with the civil servants.

At last, a workshop was organized with the client to validate the discovered stakeholders discovered and the relationship among these stakeholders. During this workshop, the stakeholders

were prioritized and plotted on a power/interest grid.

When gathering the data, an objective and independent position was taken and clarified to encourage the stakeholders to speak more freely. Besides, in this ways the stakeholders knew that anything they said was not affecting their relationship with other stakeholders. All the collected data is documented on a Miro board, which is like a digital whiteboard as shown in Figure 11 and can be found in Appendix 5.

After gathering the data, I clustered the data so it could provide me with insights on the stakeholder ecosystem (bright blue & yellow) and at the same time learn some things about the local energy initiatives and the overall abstract level of the Energy Transition itself (light blue & green). For the clustering I used four levels, from most zoomed-in or concrete to zoomed-out or abstract as shown in Figure 11:

1. The initiative level: what could be said about the initiatives themselves.
2. The stakeholder's level: what could be said about the stakeholders of the initiatives and their relationships.
3. The energy system level: what could be said about the place of the initiatives in the energy system and their influence on it.
4. The Energy Transition level: what could be said on the highest zoomed-out level, the Energy Transition and the view on this.

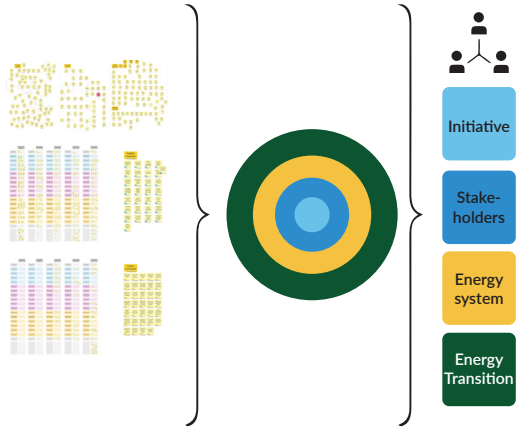


Figure 11: Flow from data to insights to analysis to ecosystem & key insights.

When all the insights were plotted on these levels, interlinks and relationships could be found. Out of these, several key insights were developed which provide knowledge about possible issues in the stakeholder ecosystem (See Appendix 6).

3.2 THE STAKEHOLDERS

The entire set of stakeholders within the context of this research contains 19 stakeholders. These stakeholders can be divided into eight categories, namely:

1. Main citizen side: Local energy initiatives, Citizens
2. Other citizen side: Neighborhoods associations, Other citizen initiatives (Purple)
3. Housing stakeholders: VvE's (Associations of owners), Woco's (Social housing organizations)
4. Companies: Medium and small companies concerning sustainability, Large energy companies
5. Municipality - civil side: Energy Transition program, 1) Strategy & policy, 2) Transformation (participation) - Client, 3) Preparation & planning, DSO wonen (Civil service concerning housing & living), Haags Samenspel
6. Municipality - political side: Municipal board, Municipal council
7. Other governmental parties: Province of South-Holland, VNG (Association of municipalities), National government, European Commission
8. Others: Duurzaam Den Haag, Independent researchers

3.2.1 Local Energy Initiatives

Local energy initiatives are citizen initiatives in The Hague working on the Energy Transition. The initiative often exists out of a group of volunteer citizens that take the lead. They think about themes around the Energy Transition like isolation of houses, renewable energy, alternative heat systems, etc. They communicate with other citizens within their district or neighborhoods (depending on the initiative's reach). The local energy initiatives come in a lot of variations and sizes. They each have their own goals, ambitions, position, and ways of doing things. Some initiatives are still starting and busy creating awareness among citizens. Others are already developing for years and have resulted in actual energy cooperatives between citizens, creating their renewable energy and collectively buying energy systems. The initiatives can sometimes reach as many as 2000 citizens and active members of 200 citizens.

3.2.2 Citizens

The citizens of The Hague are essential stakeholders for this research. The citizens are what The Hague is all about. The city of The Hague has 546.335 citizens divided over 271.455 households (Gemeente Den Haag, 2021). For this research, the citizens are mostly seen as citizens within a district or neighborhood. In 2021, 43,5% of the houses in The Hague were owner-occupied homes, 31,1% were social rental homes, and 24,7% were private rental homes (Gemeente Den Haag, 2021).

3.2.3 Neighborhood associations

A lot of districts and neighborhoods have a citizen association. These associations care about the citizens and deal with them. Sometimes, they also contact the municipality on behalf of the citizens. Often, they publish a local magazine or newsletter regularly covering all kinds of subjects relevant to the district or neighborhoods.

3.2.4 Other citizen initiatives

Besides Energy Transition orientated citizen initiatives, there are initiatives connected to other themes providing public services and goods themselves. The other themes are, for example, community development, education, employment and training, safety, water, urban development or social well-being, and healthcare (Igalla et al., 2019).

3.2.5 VvE's (Association of owners)

From all the houses in The Hague, more than 50% are part of a VvE (Gemeinde Den Haag, 2021). These VvE can concern as well owner-occupied homes as rental homes. This means that the people who live within this VvE depend more on each other when making sustainable decisions. For example, they can only choose to take solar panels on their roof anonymously. Therefore, the Energy Transition is a bit more complicated for these houses.

3.2.6. Woco's (Social housing organizations)

Around one-third of the houses in The Hague are owned by social housing organizations (Gemeente Den Haag, 2021). The houses are all rental houses. The social housing organizations control what happens with these houses concerning their maintenance, renovation, and transition readiness.

3.2.7 Medium and small companies concerning sustainability

In The Hague, there are many entrepreneurs of small to medium-sized companies (MKB) in sustainable energy. These companies are interested in the Energy Transition and could provide

knowledge, support, service, and products to others. They could also collaborate with the municipality, citizens, and large energy companies. However, they could also be a competitor to large energy companies.

3.2.8 Large energy companies

The large energy companies are providing the citizens of The Hague with energy in the form of electricity and heat. In the Netherlands, there are 63 energy suppliers. The three largest suppliers are Vattenfall (before Nuon), Essent, and Eneco (VeranderVan, 2020). People are free to choose their energy supplier and sign a contract for a year, multiyear, or flexible, so monthly.

Stedin is responsible for assessing, maintaining, and managing the energy network, including the Hague's electricity grid and gas pipelines. They are also responsible for the transport of electricity and gas. Therefore, they are the network operator.

3.2.9 Energy Transition program of the municipality of The Hague

Within the municipality of The Hague, there is a special program for the Energy Transition in the building environment. This program is divided into four teams. The first team is 'Strategy and policy' (9A). The second team is 'Transformation (including participation)' (9B). This team is the client of this research. The third team is 'Preparation and planning' (9C). The fourth team is 'Execution' (9D), but this team does not exist yet. They work together to reach their primary goal, creating a climate-neutral The Hague.

3.2.10 DSO Women of the municipality of The Hague

Within the municipality, another team is working on the Energy Transition, focusing on what happens 'behind the front door,' so within homes. This team, DSO Wonen, is about 'housing and living' and is part of the service 'Service Urban Development (Dienst Stedelijke Ontwikkeling, DSO). This team also has a lot to do with the new environmental code (Omgevingswet), which also includes a vital role for participation in citizen initiatives in designing the physical environment (Gemeente Den Haag, 2019). The Energy Transition program will become part of DSO Women in the future. This makes it easier to work together and form a unity.

3.2.11 Haags Samenspel

The team Haags samenspel is working on the interaction between the municipality and citizens of The Hague. They strengthen citizen participation, design, and development of participation trajectories and make participation more accessible (Gemeente Den Haag, 2020a). They work on increasing the quality of citizen participation in all its forms. This team provides other teams within the municipality with advice on participation and performs projects concerning participation commissioned by other teams.

3.2.12 Municipal board

The municipality of The Hague has eight executive committee members and a mayor, who each are responsible for a different set of themes. The themes of the Energy Transition, climate adaptation, and sustainability of the built city are the responsibility of Liesbeth van Tongeren. The theme participation is the responsibility of Martijn Balster. Except for the mayor, the local council chooses the executive committee members and takes their position for four years. The members determine the direction and goals of the

themes; however, a broad direction and frame are established in the coalition agreement at the start of the year of office.

3.2.13 Municipal council

The municipal council is the highest in administrative rank. The citizens choose the municipal council. They represent the citizens, create the strategy and policy framework and monitor the Municipal board. This monitoring concerns the following: if the created framework is used, are the plans executed, and is the budget spent in the agreed way.

3.2.14 Province of South-Holland

Goes without saying

3.2.15 VNG (Association of municipalities)

Goes without saying

3.2.16 National government

Goes without saying

3.2.17 European Commission

Goes without saying

3.2.18 Duurzaam Den Haag

Duurzaam Den Haag is a foundation to stimulate and support the people in The Hague who want to act sustainably. They believe that people are the driving force for the sustainable movement of the city (Duurzaam Den Haag, 2021). Projects they work on are, for example, 'Operatie Steenbreek' to destone the city. These local independent energy coaches advise citizens and the workgroup Sustainable Hague Heat to look for alternatives for natural gas. Further, the foundation is also working on projects delegated by the municipality of The Hague. The municipality is also financing the foundation; therefore, they are obligated to fulfill the delegated project with some of the money, and the other has a more free fulfillment. However, the foundation presents itself as an independent party with more flexibility than the municipality. They are an extended, more playful arm of the municipality that is not bound to strategies and protocols (Interview, Anouk Dehue).

3.2.19 Researchers

These are professionals or experts hired by the municipality or the local energy initiatives to perform particular research. The research subjects are mainly about the possible solutions for the future energy system of a neighborhood.

3.3 STAKEHOLDER INVOLVEMENT

There are a lot of different stakeholders. To indicate their involvement, the stakeholders are plotted in three circles. The three circles represent an inner circle, middle circle, and outer circle of the stakeholder ecosystem as shown in Figure 12. The inner-circle includes the stakeholders, the most connected to the context of this research, and the outer circle the least.

The inner-circle exists out of 6 stakeholders, in the first place, the local energy initiatives. They are the focus of this research. They are directly connected to the citizens. Further, they have strong connections with medium and small companies to gain knowledge, advice, and collaborate with. Most of the time, the local energy initiatives arise out of the neighborhood association or are still a workgroup of the association or at least have a connection. The local energy initiatives often use the communication canals of the associations. The VvE's are a target group of the local energy initiatives, and they have direct contact with the local energy initiatives as the same is for the citizens. The last stakeholder within the inner circle is the Energy Transition program of the

municipality. This stakeholder is active in the Energy Transition and concerns the civil servants that interact with the local energy initiatives. Besides, the client of this project is part of this stakeholder.

The middle circle exists out of nine stakeholders. These stakeholders have influence, interfere, and collaborate with the inner circle stakeholders or experience some independencies. The last four stakeholders find themselves in the outer circle. They influence the stakeholders in the middle and inner circle and set some rules for the context of the research. However, they are not directly connected to the research context. Nevertheless, they can be part of the trigger and motivation of this research.

3.4 POWER/INTEREST GRID

The power-interest grid presents the power and interest distribution among the different stakeholders (Eden & Ackermann, 2013). The way each stakeholder is handled is dependent on the level of interest and power of this stakeholder. There are four different ways of handling a stakeholder. Firstly, stakeholders with much power and a lot of interest (up-right). According to the research question, these stakeholders are

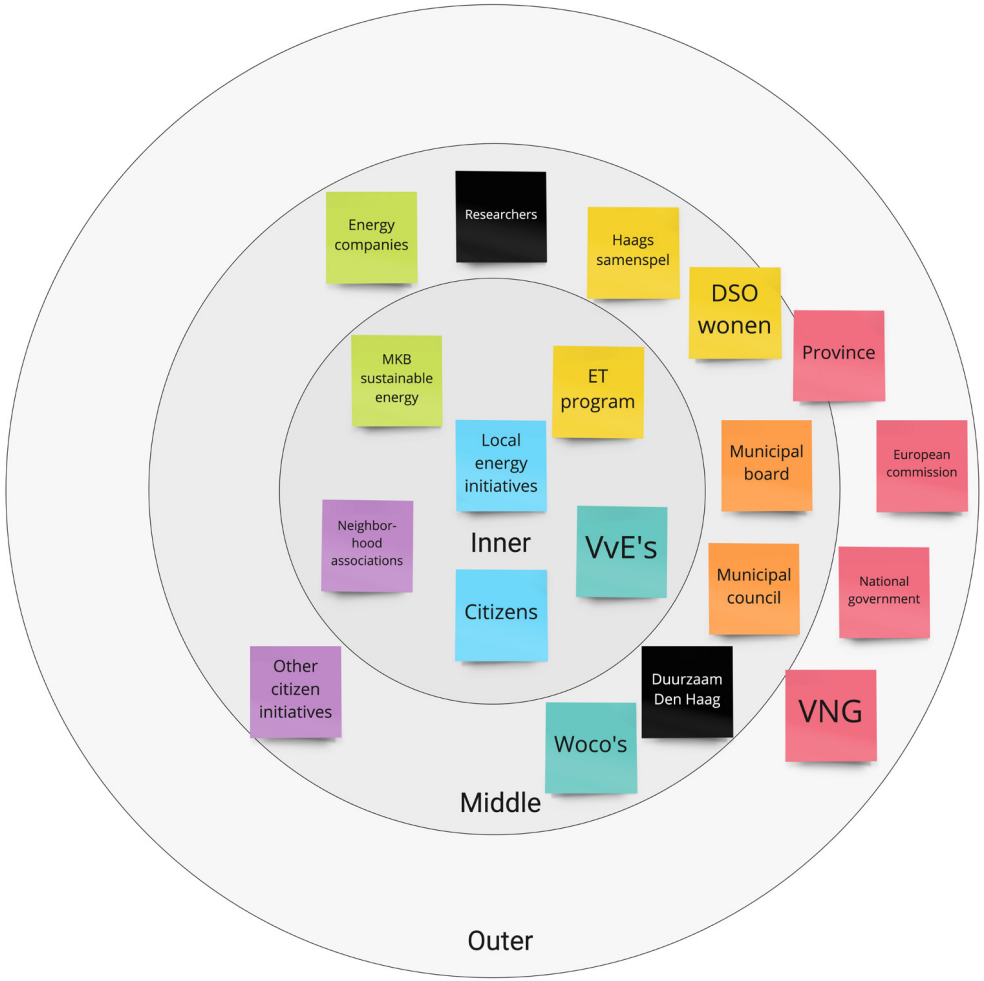


Figure 12: The stakeholder ecosystem divided in an inner, middle and outer circle.

highly involved and should be managed closely. Secondly, there are stakeholders with much power but less interest (up-left). These stakeholders can influence the situation by, for example, setting rules. However, they are not as highly involved as the stakeholders up-right. Therefore, the stakeholder up-left should just be kept satisfied. Thirdly, some stakeholders are highly interested but do not have much power (down-left). They are involved but can not do that much themselves. Therefore, they should be kept informed about the developments. Lastly, some stakeholders are involved but not that interested, and they also do not have that much power (down-left). However, these stakeholders should also be considered and should mainly be monitored. An overview of the four quadrants is shown in Figure 17.

3.4.1 Manage closely (up-right)

Within the up-right quadrant, there are seven stakeholders as shown in Figure 13. One can find the 'Energy companies in the highest right corner.' These companies have a lot of power and interest because they own the energy market and system at this moment. They are the owners of the current infrastructure and are making money on the used energy in the city. In addition, the infrastructure company has a market monopoly in The Hague. The local energy initiatives themselves also have much interest but less power than the energy companies. Since they are dependent on the current energy system, they need a collaboration with the energy companies. However, they can still do a lot without the energy companies. Further, the woco's and VvE's have less interest but more power. This mostly has to do with the fact that these are the most significant housing parties, and they call the shots about the energy situation of a very high number of households in The Hague. The

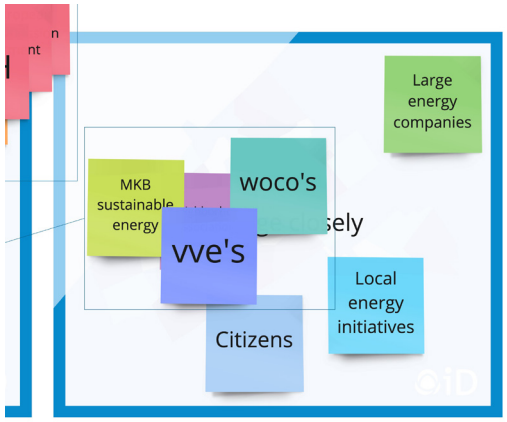


Figure 13: Manage closely quadrant.

citizens have the least power within this quadrant. This is mainly because they cannot do that much as an individual, but it will be easier to make an impact as a group. This is why local energy initiatives, VvE's, woco's, and neighborhood associations have more power. The last stakeholder to be mentioned is the MKB energy companies. These smaller companies have much less power than the large energy companies. They can collaborate with all the other stakeholders within this quadrant and are important within this Energy Transition context.

3.4.2 Keep satisfied (up-left)

Within the up-left quadrant, there are four stakeholders as shown in Figure 14. All the stakeholders within this quadrant can be found in the top right corner. So, they are just outside of the up-right quadrant. The four stakeholders are in order of power and interest: the European committee has the most interest and power, followed by the national government, the province of South Holland, and the council of the municipality of The Hague. These are all government stakeholders who influence the laws, regulations, and budget deviation.

3.4.3 Keep informed (down-right)

Only three stakeholders are placed in the down-right quadrant as shown in Figure 15. The association of Dutch municipalities (VNG) is connected to all the municipalities but has not had the same power as other governmental stakeholders. However, since the municipalities can learn from each other and support each other, and is interesting to keep them informed via the VNG. According to the Energy Transition context, other citizen initiatives are also interested in citizen participation but have much less power since they are not focused on this context. The third stakeholder is the Transformation and Participation team of the Energy Transition program of the municipality. This is the team of the municipality with the highest interest. Because they are working on participation within the Energy Transition, it makes sense that they are the most involved with the local energy initiatives. They want to support them and look at possibilities to collaborate. Further, they see the value of these initiatives more clearly.

3.4.4 Monitor (down-left)

Within the down-left quadrant, many stakeholders of the municipality can be found as shown in Figure 16. These stakeholders are working on the Energy Transition or' living and housing' theme. They influence the circumstances of the local energy initiatives, but the initiatives can keep progressing without them. Among the stakeholders of the municipality, there are some slight differences in interest and power, but this is mainly based on the internal ways of doing of the municipality or based on budget. Another stakeholder within this quadrant is Duurzaam Den Haag, the sustainability foundation. Since it is an extension of the municipality, they almost have the same interest and power, just a bit less. Lastly, researchers are found in this quadrant as well. This mostly has to do with the fact that they are not sure that people will do something with their research results. Further, they are less interested and involved with the daily activities of the local energy initiatives.

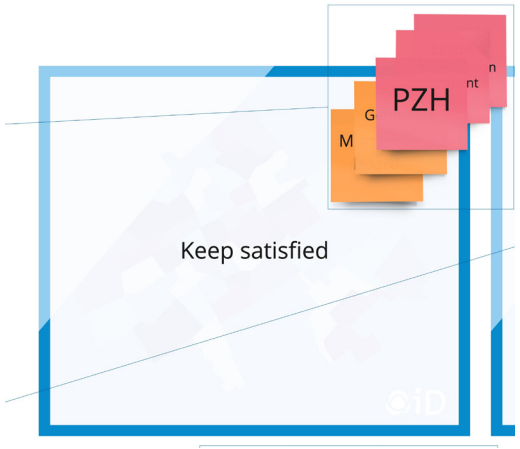


Figure 14: Keep satisfied quadrant.

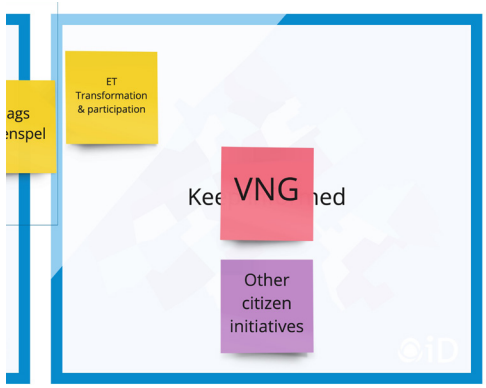


Figure 15: Keep informed quadrant.

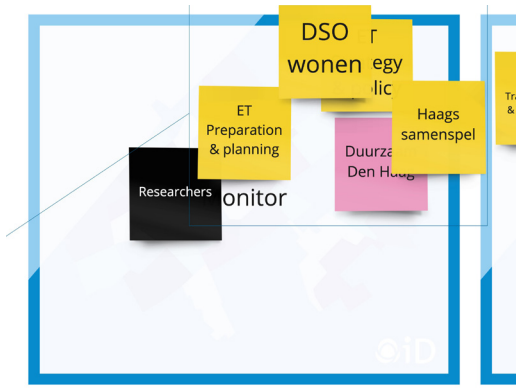


Figure 16: Monitor quadrant.

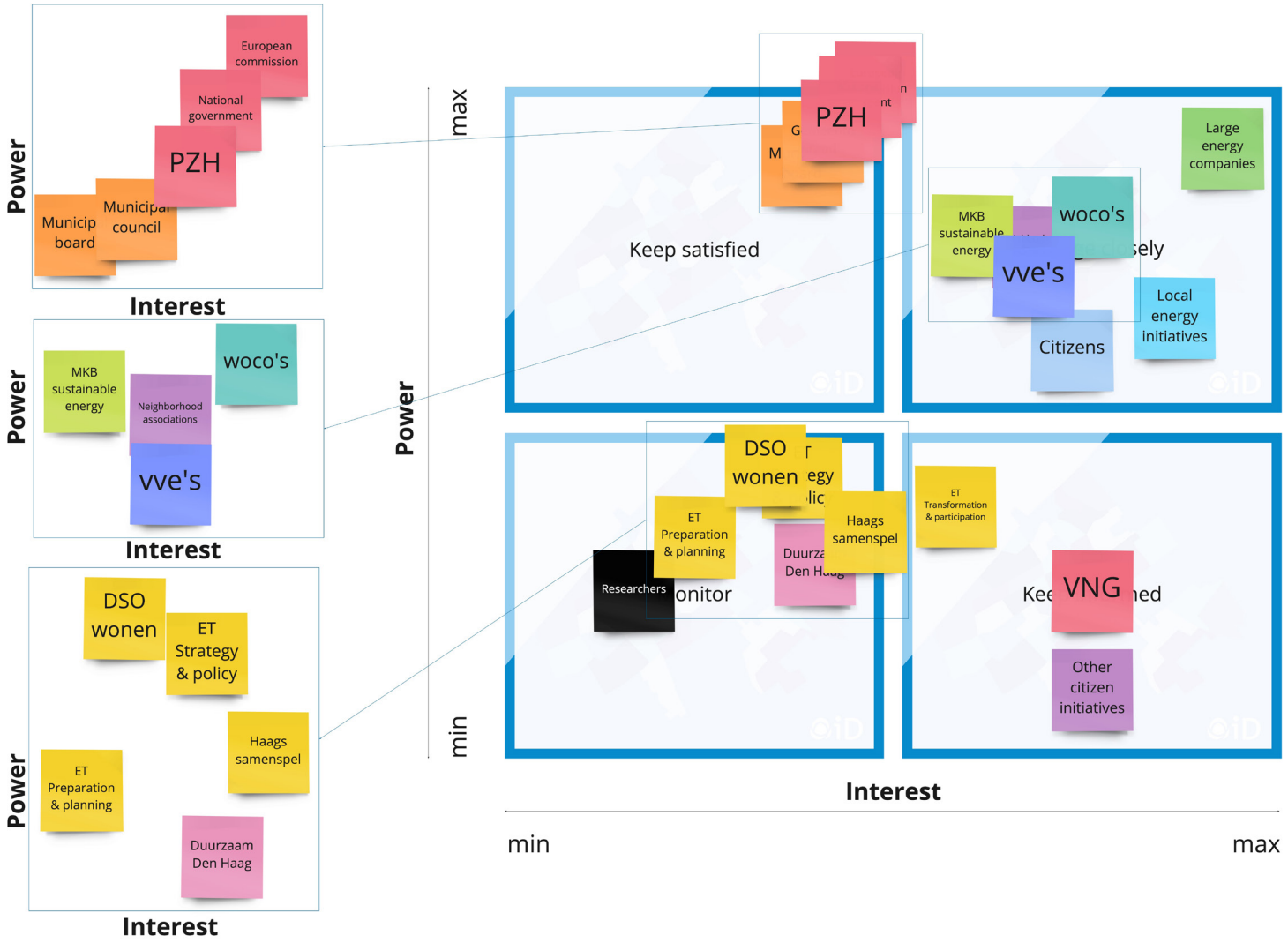


Figure 17: The overview of the four different quadrants of the power/interest grid with three 'zoomed-in' spots on the left.

3.5 STAKEHOLDER ECOSYSTEM

Looking at the stakeholder ecosystem, the high number of stakeholders present are almost all interconnected. There are three main big blocks (red, light yellow, light blue) as shown in Figure 18. The first block concerns the red stakeholders, which are the other governmental parties. This stakeholder block provides the municipality with top-down pressure and more responsibility concerning the Energy Transition. However, some stakeholders like the Province and the European Commission can subsidize citizen initiatives. Most of the time, the initiatives also need to prove they have the support and approval of the municipality already.

The second big block concerns the orange and yellow stakeholders. These represent the municipality in total, including the political side and the civil servant's side of the municipality. The main stakeholder in this block is the Transformation team within the Energy Transition program. This team is the project's client and is responsible for citizen participation. However, team Preparation & planning also interact with the local energy initiatives. Even Haags Samenspel could get involved with some initiatives through other teams or their agenda.

The third and last block is the blue block concerning the blue stakeholders and one purple, turquoise, and green. This block represents the main stakeholders of this research except for the Transformation teams since they are part of the municipality block. The most critical connection is between the local energy initiatives and the citizens. The initiatives are meant to be for, with, and through citizens. In this way, it is an indirect way for the municipality to reach the citizens in The Hague. As earlier described, the local energy initiatives are often connected to the neighborhood association, which is also for, with, and through citizens. Only the neighborhood association is meant for all sorts of themes and activities in the neighborhood. Further, the VvE's and sustainable medium and small companies are interesting stakeholders closely connected to the local energy initiatives.

Then we have some stakeholders who are part of the ecosystem but not part of one of the three blocks. Large

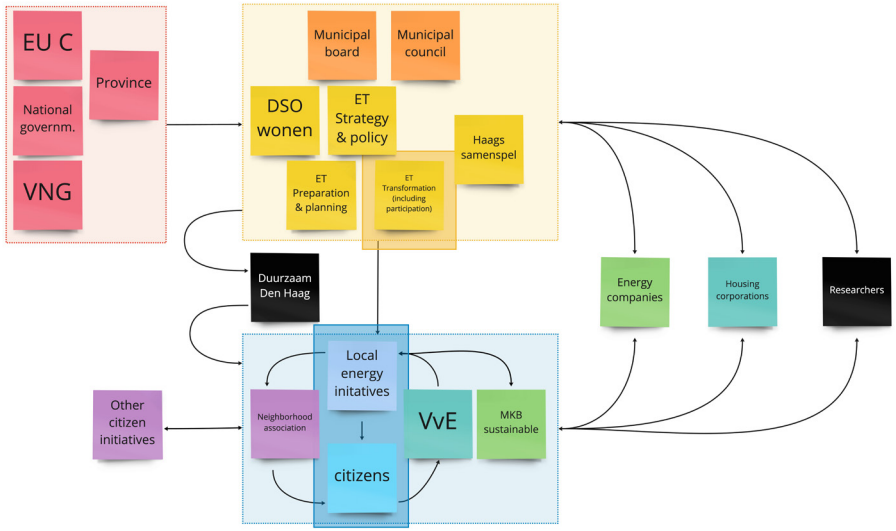


Figure 18: The overview of the stakeholder ecosystem including the three main blocks in red, yellow and blue.

energy companies are essential players in the current energy system. Some of the initiatives are in contact with them. It depends on the goals and ambitions of each local energy initiative, how much they need to be in contact and how much they still see a place for these prominent players in the future energy system. Nevertheless, these are essential players to start the conversation about the future energy systems, but they are commercial and put their interests above the citizens' interests. The social housing organizations are another more prominent player in the field. They own many homes in The Hague and therefore have much power. However, these homes are more of the municipality's concern than of the local energy initiatives. It is very complex and maybe should be forced by the national government to make the homes transition ready. Then besides the local energy initiatives, there are other citizen initiatives. These initiatives are focused on other themes than the Energy Transition. Other citizen initiatives are in contact with the local energy initiatives, mainly supporting each other or using each other's network. Researchers are the ones who can give objective advice. They do research for the initiatives as well as the municipality. At least Duurzaam Den Haag sometimes acts as a middleman between the municipality and local energy initiatives or citizens. However, it is often seen as an extension of the municipality since the municipality finances it. Further, multiple initiatives question the impact of the projects of Duurzaam Den Haag and say they are too focused on awareness and not on actual action.

The two most important stakeholder relationships for this research are between the municipality and the initiatives (or even the total yellow block and the blue block) and between the local energy initiatives and the citizens (dark yellow & dark blue). These two connections form the indirect connection between the municipality and the citizens, which is connected to the total goal of the project, namely letting citizens participate in the Energy Transition. There also exists a direct connection between the municipality and the citizens. However, this is not included in the total stakeholder system because this relationship is not within the scope of the research question.

3.6 KEY INSIGHTS

Within this section the key insights are presented. These insights are gathered based on four levels, namely: initiative level, stakeholder level, energy system level, and Energy Transiton level. For each of the four levels some key insights were discovered. The insights represent the current issues in the stakeholder ecosystem on these four levels. In total seven issues were discovered as shown in Figure 19. The quotes used within this section are taken from the interviews with stakeholders.

3.6.1 Part of the solution

The initiatives have the potential to be part of the solution: they give people a voice, create action, but are dependent on their ambition level. A civil servant states, *'we need the initiatives to find the right balance' 'initiatives can say and do what they want, which is great because the municipality cannot do this.'* However, not each neighborhood is suitable or has an initiative. That is already a reason to believe that the initiatives are only part of the solution. The initiatives themselves also state that *'citizen initiatives are not a solution for everywhere and everybody.'* There is a general struggle when reaching

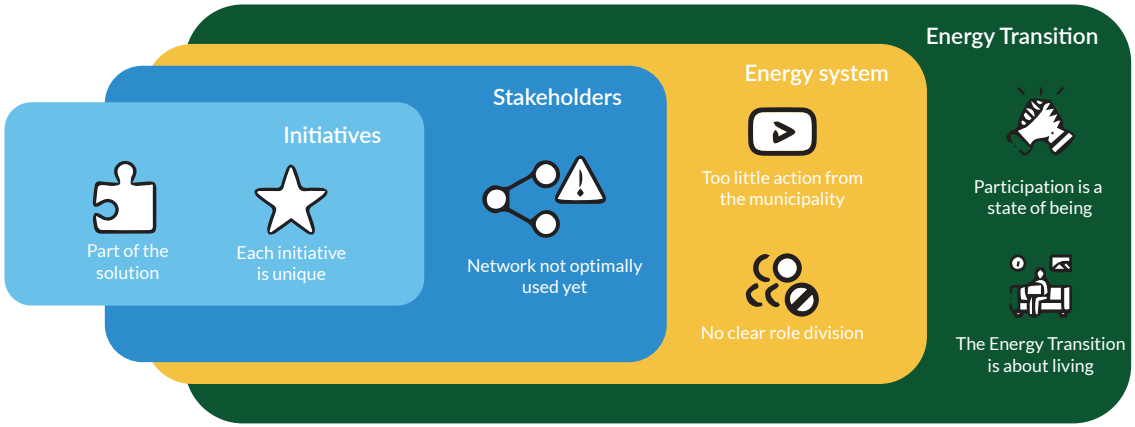


Figure 19: The key insights on the stakeholder ecosystem based on four levels.

citizens, and some are even harder to reach than others. Also, the initiatives say that a lot is expected from the volunteers to keep the initiative going. In addition, a civil servant states, *'we cannot lean on the initiatives.'*

3.6.2 Each initiative is unique

Each initiative is unique. They differ in goals, stakeholders, topics, participation level, and roles. Further, this makes sense if you think that initiatives are connected to neighborhoods. Neighborhoods are not all the same either. So, that already is a reason for differences between the initiatives. Also, the civil servants state that *'you see many differences between the initiatives.'* However, they also mention that these differences do not matter, namely *'every role the initiatives want to take, should be possible.'* Therefore, it is not possible to have just one way to interact with the initiatives as a municipality. Civil servants state that *'the initiatives need customization in interaction with the municipality.'*

3.6.3 Network is not optimally used yet

The network is not optimally used yet: no strong network, sometimes competitor vibe and they could help each other more, and share a goal/aim/vision for the city The Hague. Out of the interviews with the different local energy initiatives, it came forward that they do not all have the same connections and collaborations with stakeholders. Collaboration with stakeholders like medium or small companies or Duurzaam Den Haag can help them. Not each of the initiatives has already been in contact with other initiatives. The connection between the municipality and the initiatives differs in intensity. The municipality has put its focus on ten so-called 'focus neighborhoods.' If the initiative is not one of these neighborhoods, they get less attention. The municipality has chosen for these 'focus neighborhoods' because of capacity issues *'the ET program has the task to focus on the citizen initiatives, and the capacity maximum is reached' 'sometimes, we need to sell a "no" to the initiatives'* and because they want to experiment before handling all the neighborhoods in The Hague.

3.6.4 Minimal action from the municipality

The municipality has a lot of different teams. These teams used to work together. However, they do not always think the same or do the same. Therefore, according to the initiatives, there is mostly talking and minimal action from the municipality.

The initiatives have said the following: ' *There is much talking and relatively less doing, a nota will not change much'* and *'a lot of talking clubs within the municipality, but no isolation (action) clubs…'*. Further, the initiatives state that it highly depends on whom they speak from the municipality, what kind of help they get, and that the municipality itself is not communicating that much. Some initiatives state that *'it is not clear for me what the municipality is doing at the moment'* and *'I am worried about how the municipality is not communicating about how things should go in the Energy Transition, which makes people insecure.'*

3.6.5 No clear role division

There are no explicit, defined roles. The role division between initiatives and the municipality is not clear at all. Especially since sometimes, different roles are expected from the municipality, which makes it complex. The Energy Transition is dynamic and networked. Therefore the ecosystem, stakeholders, and their places in the ecosystem are also still dynamic and forming. It is important to clarify the role division and agree on the way things should go. At this moment, this is not the case *'if we talk about the Energy Transition, is nobody ever on the same page. A clear plan is needed with a division in responsibilities and tasks. It begins by telling each other their expectations. This clarification of the role division should be executed further is still a question'. 'Collaboration requires a common pursuit, e.g., vision. Who is formulating this vision?'.*

3.6.6 Participation needs to be fully integrated within the municipality

Participation needs to be fully integrated in the way the municipality operated and executes. It is not about a project, so a moment or an interaction, but it is about the total vision of the municipality. They need to live and breathe participation to make it happen. Otherwise, it keeps being participation just to participate. At this moment, it seems more like that last one. Another problem is that sometimes the municipality thinks that the citizen initiatives can be used to cover all the needed participation, but they cannot. Despite this, the initiatives state that *'what the citizens do not want, we do not want either'*. So besides the initiatives, the municipality also actively needs to involve citizens in other ways *'the collaboration with citizen initiatives can on no ground replace the direct relationship and participation relation between the municipality and the citizens.'*

3.6.7 More attention needed for the social side of the Energy Transition

Among the initiatives and citizens, the Energy Transition is about more than the technical aspects. There is *'minimal focus on the social side'* and *'everything is focused on energy, and I think this is a big mistake.'* It is broader than energy. Also, lifestyles and their living environment have to do with it. It becomes a more sensitive subject when framing it as their living environment. The municipality should start to frame the Energy Transition because otherwise, the citizens and the municipality are not speaking the same language during this Transition.

3.7 THE FUNCTIONING OF THE ECOSYSTEM AND ISSUES TO BE AWARE OF

This second part of the preparatory research aimed to better understand the research context by analyzing the stakeholder ecosystem. In the first place, the complexity of the stakeholder ecosystem has become clear. This complexity has to do with the high number of involved stakeholders. Each of these stakeholders has an own interest, motivation and power. Furthermore, the stakeholder ecosystem shown that the municipality is playing an important role since it is connected to almost all stakeholders. The complexity of the ecosystem is also impacted by the fact that several teams within the municipality are connected to local energy initiatives. This makes it harder to collaborate and to build a strong and consistent relationship.

Finally, seven key insights based on four levels provide the current issues of the stakeholder ecosystem. These issues have to do with the uniqueness of the local energy initiatives and that they can only be part of the solution. Furthermore, the ecosystem is a large network of stakeholder but not optimally used yet. Besides, the local energy initiatives state that there is minimal action from the municipality or it is not transparent enough, there is no clear role division among stakeholders and participation is not yet fully integrated within the municipality. Lastly, there is too much focus on the technical side of the Energy Transition and there should be more attention to the social side. The next chapter contains a short discussion and conclusion on the preparatory research and explains the approach for the rest of this research.

4. THE APPROACH FOR USING THREE PHASES

Chapter 2 and 3 included the preparatory research of the first phase of this research. Within this chapter a short discussion and conclusion of the preparatory research is presented. Furthermore, this chapter will provide an elaborate explanation of the research approach to answer the main research question. This research approach makes use of three separate phases, from which the preparatory research is covering the first phase. For the second and third phase an own research question will be presented. These two research questions and therefore the second and third phases together, will provide the answer to the main research question. Finally, for both the second and third phase a short description of the research approach is explained. A more elaborate explanation of the research approach of the second phase can be found in Intermezzo 1, which follows after this chapter. The research approach of the third phase is explained in Intermezzo 2, which follows after Chapter 7, the final chapter of the second phase.

4.1 DISCUSSION AND CONCLUSION ON THE PREPARATORY RESEARCH OF THE FIRST PHASE

The preparatory research aimed to find a way to research the local energy initiatives, specifically in a transition context. Besides, the research aimed to gain insights regarding the stakeholder ecosystem of the local energy initiatives. Hereto, the preparatory research answers to following research questions:

1. *How to investigate local energy initiatives in the transition context?*
2. *What does the stakeholder ecosystem for local energy initiatives look like in The Hague?*

The results indicate that there are multiple theoretical concepts relevant when researching local energy initiatives. In the first place, citizen participation which is literally mentioned within the research question. Citizen participation is a way to close the gap between the citizens and the government. It occurs on eight different levels, which can be simplified into low, moderate and high participation. The lowest level is the level of 'manipulation', when citizens are only educated by powerholders. The highest level is the level of 'citizens control', when citizens have the majority or full power over the decision-making.

Another relevant concept is Social Innovation. The local energy initiatives are innovating in social ways rather than technical ways. Therefore, the initiatives are social innovations. Social innovations innovate in new ways of doing, organizing, framing and/or knowing. When researching innovations in a transition context, the Multilevel Perspective is often used. However, when researching social innovation the Transformative Social Innovation framework is more suitable. Therefore, this framework is also most suitable to research the local energy initiatives in a transition context.

The last relevant concept is Participatory Design. Participatory design is an approach which uses particular design methods like co-creation sessions and workshops. This approach is especially suitable to tackle sustainability problems. Furthermore, participatory design includes

the perspectives of one or multiple stakeholders. These two reasons make this concept interesting to include within this research.

When looking at the stakeholder ecosystem of the local energy initiatives, it can be seen that it shows a high level of complexity. This complexity is mainly because of the large number of involved stakeholders. Each of these stakeholders has their interests which differs from others. Furthermore, there are within the municipality many teams interacting with the local energy initiatives which adds an extra layer of complexity. Especially, since the muncipality is together with the initiatives connected to most of the stakeholders. Therefore, the municipality plays a significant role in the stakeholder ecosystems.

The ecosystem is experiencing many issues. The initiatives are all unique, which makes the interaction between each initiative and the stakeholders not all the same and therefore are difficult to be standardized. This could be one of the reason why the role division is not clear yet. However, this is something which needs to be researched further. Furthermore, the network is not optimally used yet. Not all initiatives are connected to all the interesting stakeholders and this can be optimized. When looking specifically at the municipality, the initiatives state that there is currently not enough action coming from the municipality. Or this action is not showed to the citizens and in this case there is a lack of transparency. In addition, the way the municipality is handling citizen participation is not supporting their values. Sometimes, they only participate to participate, including participation too late in the process or see it as ticking a box, something they just have to do. Citizen participation needs to be fully integrated in the way the municipality operates and executes. Finally, multiple stakeholders are focusing too much on the technical side of the Energy Transition. The local energy initiatives want to focus more on the social side and frame the Energy Transition within the citizen's living environment. This is much more appealing and understandable for people.

4.2 THE TWO FOCUS POINTS OF THE RESEARCH QUESTION DIVIDED INTO A SECOND AND A THIRD PHASE

This research aims to develop a way for the municipality of The Hague to increase citizen participation in the Energy Transition through local energy initiatives. Therefore, this research has two focus points. The first point focuses on the local energy initiatives in The Hague and their involvement with citizen participation. The second point focuses on the role of the municipality when increasing citizen participation through the local energy initiatives. Because of these two focus points the research question is split into two separate research questions. Each research question will be covered within an own phase of this research.

Overall, the research contains three phases. The first phase is covering the introduction, preparatory research and the overall research approach. As follows the second phase zooms in into the local energy initiatives. The third phase focuses on the role of the municipality of The Hague. Finally, an outro includes a discussion, conclusion and recommendations for the complete research and answers the research question. For the second and third phase the research questions is split into the following two research questions:

(Research question of the second phase)
What is the role and position of local energy initiatives contributing to the Energy Transition in The Hague and what is the potential of their contribution?

(Research question of the third phase)
In what ways can the municipality collaborate with local energy initiatives to stimulate citizen participation in the Energy Transition?

Within the third phase, there will be looked into different ways for the municipality to collaborate. Since, this also contains designing and shaping these different ways, a design process is applied. In addition, a design goal is set for the third phase of this research. The design goal is as follows:
Design a process strategy and action repertoire for the participation team of the Energy Transition program of the municipality of The Hague to scale citizen participation through local energy initiatives.

4.3 THE RESEARCH APPROACH FOR THREE PHASES

For the first phase of this research a preparatory research was conducted. The approach for this phase is described in Chapter 1. For the second and third phases of this research an own research approach is applied. As mentioned earlier for the third phase of the research a design process is applied including a design goal. The design process is based on the Double Diamond model. For the second phase of the research a collective case study will be conducted based on the Transformative Social Innovation framework. Hereto, Intermezzo 1 explains the research approach of the second phase and Intermezzo 2 explains the research approach of the third phase.

The entire approach of this research is based on three phases and can be seen as three diamonds with converting and diverting movements as shown in Figure 20. The first phase has zoomed out to the context of this research, the relevant theoretical concepts and the stakeholder ecosystem. As follows, the second phase is zooming in into the local energy initiatives, their role, position and the potential of their contribution to the Energy Transition. Finally, the third phase includes a Double Diamond design approach to innovate the relationship between the municipality and the initiatives, and how they can collaborate. Therefore, the third phase focuses on the role of the municipality.

An overview of this entire research approach can be found in Figure 20. The Figure shows the three phases in purple (phase 1), yellow (phase 2), and blue (phase 3). The Figure shows that the total research approach contains three diamonds and the divergent and convergent thinking directions. Furthermore, the circles represent the outcome of each phase and the total outcome. The squares represent the two Intermezzos.

In the end, this research covers the thesis of both the MSc Industrial Ecology as of the MSc Integrated Product Design. Therefore, this research is part of a Double Degree thesis. The thesis of the MSc Industrial Ecology is covered by the first and second phase of this research, which the brown line in Figure x, and therefore Chapter 1, 2, 3, 4, Intermezzo 1, and Chapter 5, 6, and 7. The first and third phase of this research covers the thesis of the MSc Integrated Product Design, which is the dark blue line in Figure x, and therefore Chapter 1, 2, 3, 4, Intermezzo 2, and Chapter 8, 9, 10 and 11. Chapter 12 is the final chapter and describes the total outcome of this research in a discussion, conclusion and recommendations.

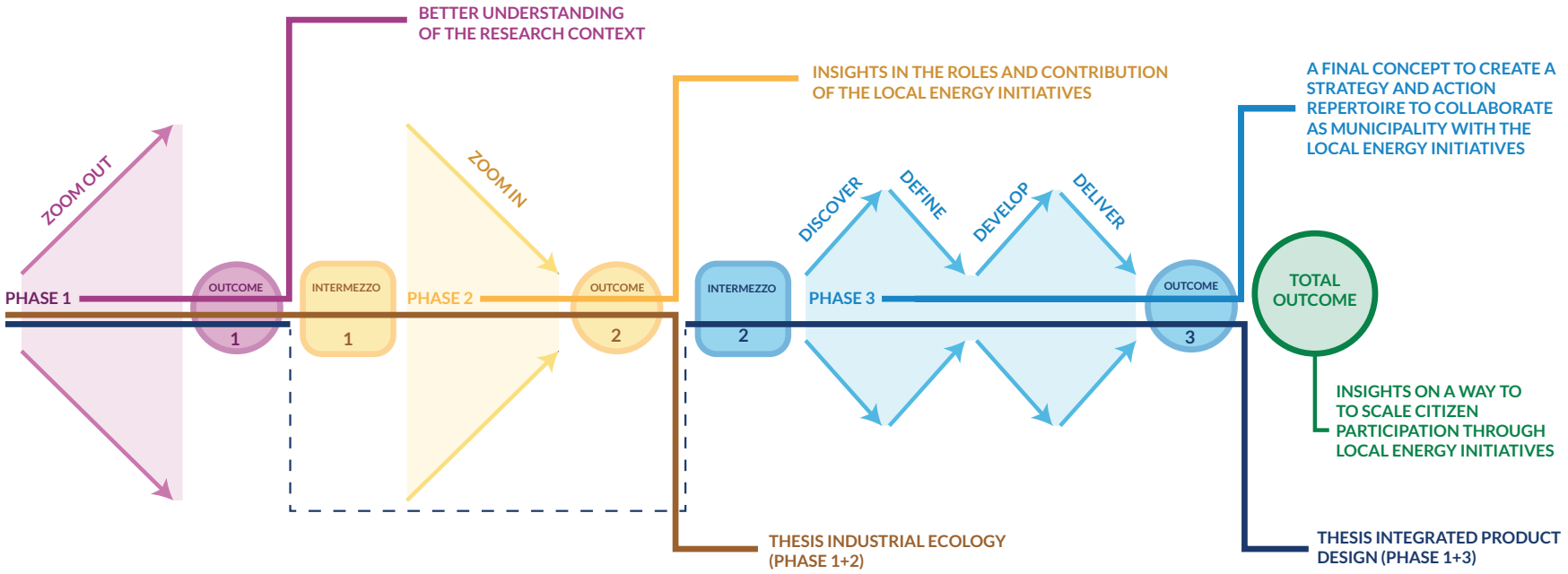


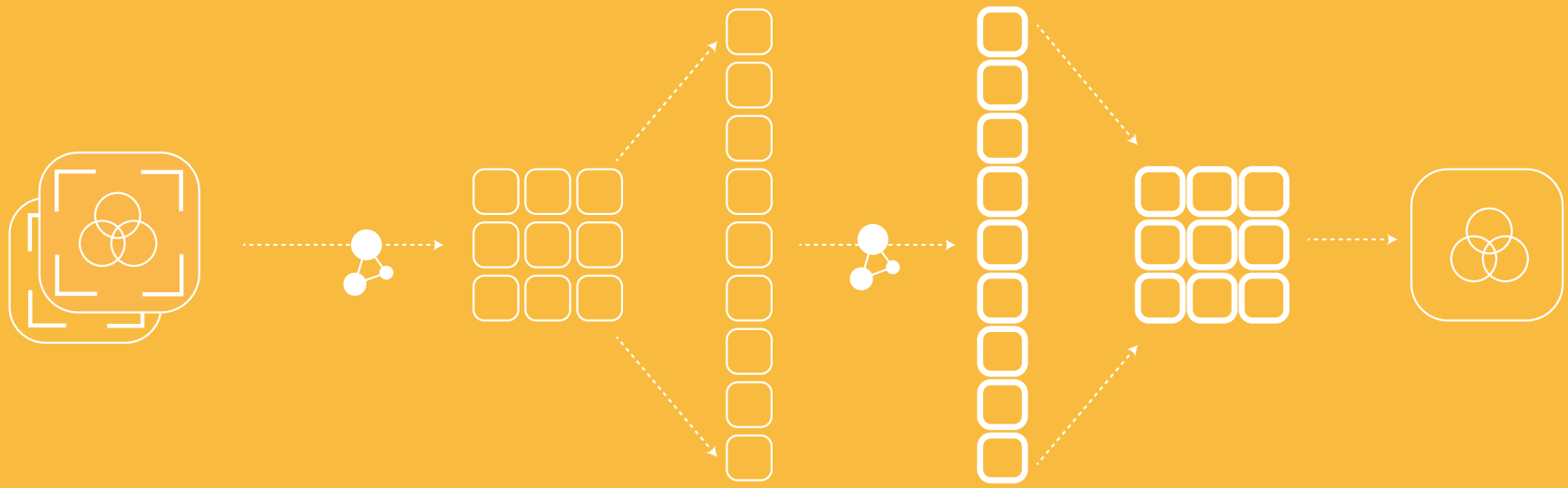
Figure 20: The complete research approach based on three diamonds and divided into three phases.

4.4 HOW THE FIRST PHASE INFLUENCES THE SECOND AND THIRD PHASE

This chapter was the last chapter of the first phase. Here after, the second phase will start which focuses on the local energy initiatives. Out of the first phase, multiple theoretical concepts were discovered which are useful when researching local energy initiatives. These concepts will be used in the second and third phase of this research. Furthermore, insights were gained on the complexity and issues of the stakeholder ecosystem. It is important to carry this knowledge when researching the local energy initiatives and provides interesting focus points, like the uniqueness of the initiatives, unclear role division, the minimal action of the municipality and the nonoptimal use of the network. Furthermore, the stakeholder ecosystem made clear that the municipality plays a significant role. This is essential information when innovating the relationship between the municipality and the local energy initiatives within the third phase of this research. In addition, this information highlights the relevance and importance of the third part of this research.

INTERMEZZO 1

The first intermezzo is an introduction to the research process of the second phase. There is chosen for a collective case study appraoch. The overall research approach is shortly presented and explained.



AFTER ZOOMING OUT, A COLLECTIVE CASE STUDY ZOOMS IN

Within the second phase, the focus lies on better understanding the local energy initiatives. This understanding includes knowledge about the role and position of the local energy initiatives in The Hague and about the potential of their contribution to the Energy Transition.

A COLLECTIVE CASE STUDY APPROACH

For the research into the local energy initiatives a collective case study approach will be used. In the first place, the research framework is developed to conduct the research. This research framework is based on the Transformative Social Innovation framework and is built out of three research areas and 16 research elements. For the collective case study, nine cases are selected each based on a local energy initiative in The Hague. For each of the cases a semi-structured interview has been held with a member of the initiative. An explanation of the research framework, research areas, elements, the case selection, semi-structured interviews and analysis is presented in Chapter 5.

The analysis delivers the results for each of the research elements per case. As follows, a cross-case analysis is providing combined results for each of the research elements. All the results can be found in Chapter 6. Finally, the discussion and conclusion on the results are presented in Chapter 7. An overview of the research apparoach of the second phase is shown in Figure 21.

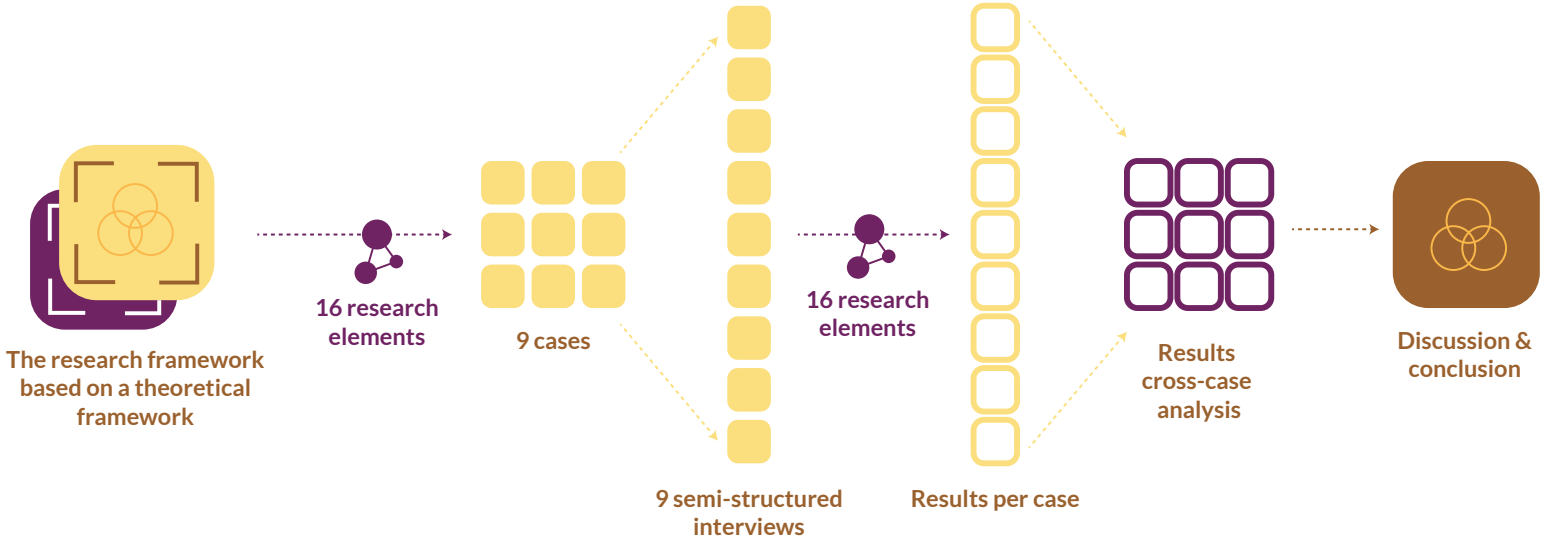
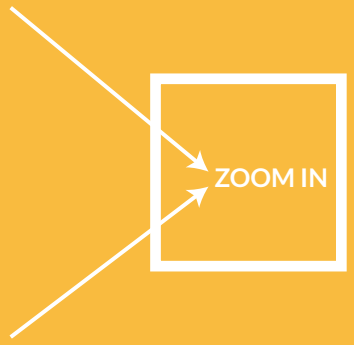


Figure 21: An overview of the research approach of the second phase of this research.



PHASE 2

The second phase zooms in into the role and position of the local energy initiatives and the potential of their contribution to the Energy Transition. Within this phase the research framework is presented and the methods. These are followed by the results of this research based on nine local energy initiative cases. Finally, the discussion and conclusion are draw from the results.

5. THE RESEARCH FRAMEWORK AND METHODS

As described in the first intermezzo, the research approach of the second phase includes a collective case study. The research framework is presented and explained within this chapter for the empirical research. This research framework includes three research areas and is based on the Transformative Social Innovation framework. Furthermore, the choice for a collective case study is explained, and the empirical research methodology is presented. This methodology includes the selection of the nine cases and the questions of the semi-structured interviews used for gaining data of each of the nine cases. Finally, the way of analyzing is explained.

5.1 THE RESEARCH FRAMEWORK

The empirical research part of the second phase of this thesis aims to define the role and position of the local energy initiatives in The Hague and the potential of their contribution to the Energy Transition. A research framework is developed to execute the empirical research. The research framework has three focus areas, and an overview of the framework is presented in Figure 23.

The first area focuses on the role and position of the local energy initiatives. One of the interesting elements to research is the way these initiatives innovate. This can be new ways of doing, organizing, framing, and knowing based on the Social Innovation definition of Haxeltine et al. (2016) and shown in Figure 22. When looking at these four ways of innovation, it is interesting to see how the initiatives empower citizens. Empowering people is also included as a research element. The last research element to look into the role and position is the influence of the COVID-19 crisis. The COVID-19 crisis is a contextual factor that may influence the current situation and is essential to consider and include in this research.

The second area focuses on the potential of the contribution of the local energy initiatives to the Energy Transition. The Transformative Social Innovation (TSI) framework is used as a conceptual framework to research this area. As described in Chapter 2, the TSI framework

Figure 22: The four ways of innovating as social innovation.

exists out of four types of relations. The first type of relation is the internal relations of the initiative. These relations are included in the first area of this empirical research part.

The second type of relation is network relations. These relations are about network formation processes. There are two interesting research elements within these relations. The first one is a shared vision among the different stakeholders. The second research element is a social movement because of the local energy

initiatives. At last, there will also be looked into **other challenges** the initiatives face within the network formation processes.

The third type of relation is the relation to **Institutional Change**. This relation is the confrontation between the initiative and the established and/or dominant institution(s) they want to change. These institutions exist out of particular social relations and the current patterns of doing, organizing, framing, and knowing. Institutions are defined as 'norms, rules, conventions and values' (Haxeltine et al., 2016). On the one hand, the social innovation initiative is provided by the structure of an institution and therefore shaped by it. On the other hand, it wants to change this same institution. How they want to change it is about **to challenge, alter or replace an institution**. It is about what they think should change about the status quo and what they find promising for the future. For this relation, it is interesting to research how the initiatives influence institutions and the other way around. The way the initiatives want to change the current energy system will get extra attention.

The fourth type of relation is the relation to the **socio-material context**. The socio-material context is the total of all the actors, social relations, institutions, and resources. Therefore, according to the socio-materials context, the TSI process is multi-dimensional, so it cannot be reduced to one crisis or societal game-changer. The interesting research element is **societal impact** and focuses on the possibilities for initiatives to connect the initiative to other societal themes. It is essential to mention that the third type of relation is embedded in the fourth type. The difference between the two is that the initiatives can influence the institutions and the other way around. The socio-material context can only influence the initiatives, but the initiatives cannot influence the socio-material context.

The third area focuses on the relationship between the municipality and the local energy initiatives. This is also interesting to include in the empirical research part because the main research question of the thesis is about how the municipality can scale citizen participation through the local energy initiatives. Therefore, the relation between the municipality and the initiatives is especially interesting when looking into the initiatives. The third area can also be called the **targeted intervention spot**. There are three research elements included in this area. The first and second elements are about **satisfaction** and **dissatisfaction** with the municipality—the third element points specifically at the **relationship** and how this is shaped.

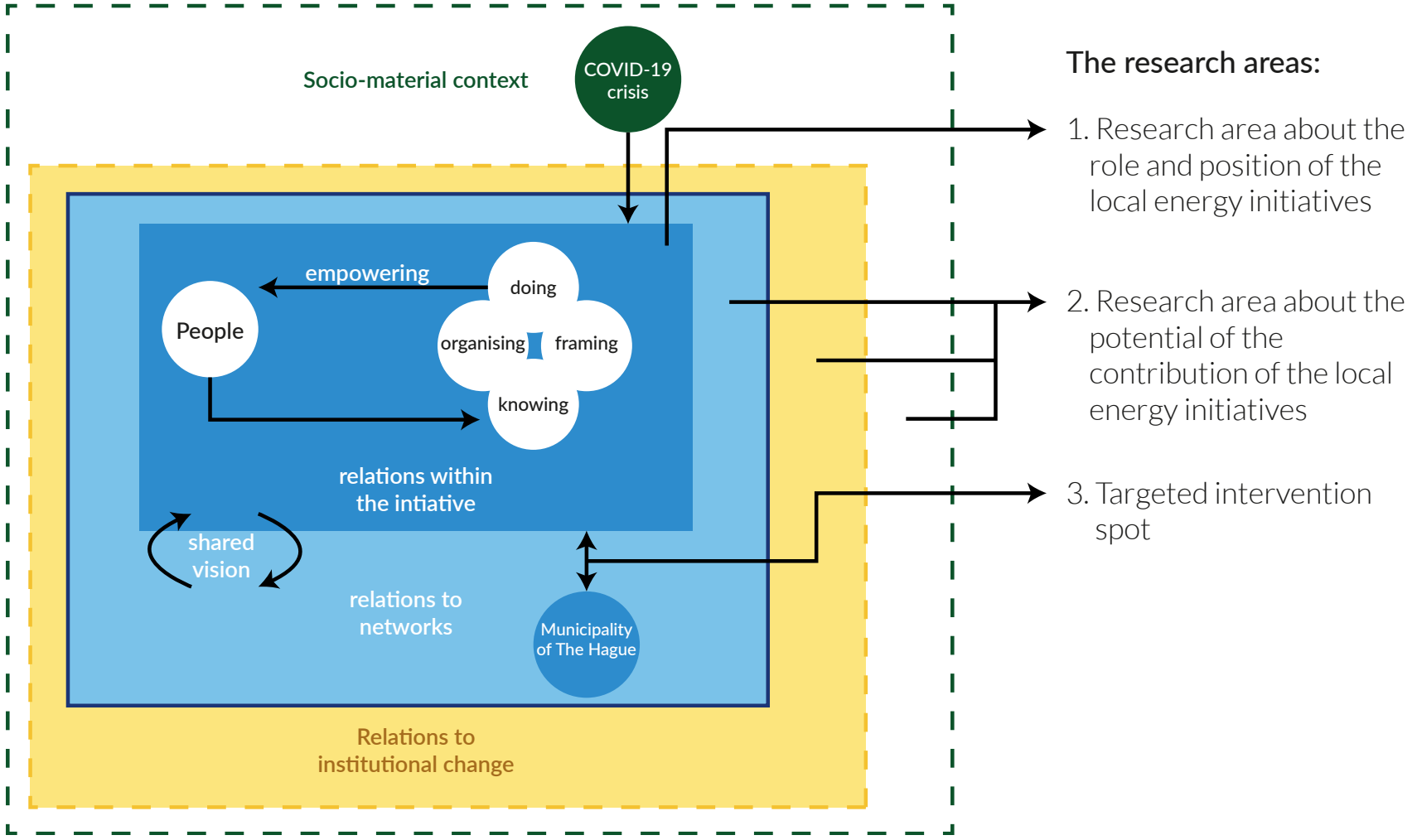


Figure 23: The research framework including three research areas for the second phase of this research based on the Transformative Social Innovation framework.

5.2 THE METHODOLOGICAL APPROACH

As follows, the research framework will be applied to a collective case study. In order to gain insights into the local energy initiatives in The Hague, a case study approach is needed. In the first place, this is needed because the local energy initiatives are real-time phenomena. Secondly, research resulting in general conclusions on the municipality's role according to citizen initiatives in the Energy Transition has been done already. Therefore, there is a need for more specific results in the context of The Hague, which makes the case study approach even more suitable. The case study approach enables to 'conduct an in-depth exploration' of the local energy initiatives in the context of The Hague (Rashid et al., 2019).

The local energy initiatives are the subject of this research. So, the subject contains multiple cases and not one unique phenomenon. In addition, the variation among the local energy initiatives in The Hague makes it impossible to use one case study to represent all the different initiatives. Therefore, the collective case study approach is the most suitable for this research. A collective case study involves studying multiple cases to generate a broader understanding (Crowe et al., 2011).

According to the paper of Crowe et al. (2011), the case study approach contains the following crucial stages: defining the case, selecting the case(s), collecting and analyzing the data, interpreting data, and reporting the findings.

Criterion	Description
Location	The case study must be located in The Hague, The Netherlands.
General goal	The case study should be based on a local energy initiative, which means a citizen initiative with goals involving the Energy Transition and sustainable ways of consuming and producing energy.
Diversity	The case studies must differ in neighbourhood or in subject (total transition or heat transition) they are active in and preferably (but no must) differ as much in year of initiation, progress, stakeholder network, activities and (specific) goals.

Table 2: The criteria for case selection of the collective case study.

5.3 DEFINING AND SELECTING THE CASES

Since there is much variation between the local energy initiatives in The Hague, it is essential to cover as much variation in the selected cases as possible. The initiatives can differ in the neighborhood, year of initiation, progress, stakeholder network, activities, and goals. In total, nine different local energy initiatives form nine different case studies. The cases were selected based on the criteria found in Table 2. An overview of the cases is shown in Tables 3 and 4.

5.4 DATA COLLECTION AND PROCESSING

The case studies were performed by conducting semi-structured interviews with members of nine local energy initiatives in The Hague. Each initiative represents a case study. The interviews were held in parks, cafes, or at the interviewees' homes if possible. In this way, observation could be done of the neighborhood where the initiative is active. However, this was not

Initiative	Neighborhood	Start year	Short description	Interview #
Vogelwijk Energie(k)	Vogelwijk	2010	Vogelwijk Energie(k) is an association of about 250 enthusiastic people in the Vogelwijk in The Hague who strive for sustainability in everyday life. Our goal is a CO2-neutral Vogelwijk by 2040. https://www.vogelwijkenergiek.nl/	#1
Buurt Energie Statenkwartier	Statenkwartier	2013	Buurtenergie Statenkwartier (BES) is an association that stems from a private initiative of a number of residents of the Statenkwartier. Neighborhood energy Statenkwartier is committed to making the Statenkwartier more sustainable. By informing about and encouraging measures to reduce energy consumption and improve the indoor climate of homes. https://www.statenkwartier.net/bes/	#2
Statenwarmte	Statenkwartier	2017/ 2018	In more than 2.5 years, we as residents have investigated how we can prepare for a natural gas-free future, whereby we can also influence the process and the results. https://www.statenwarmte.nl	#3
Stichting Hernieuwbare Warmte Ypenburg	Ypenburg	2018	The initiative is an independent foundation for and by residents of Ypenburg, who are committed to CO2-neutral district heating in 2025. Safe, reliable, the same comfort at the same cost. https://www.hernieuwbarewarmteypenburg.nl	#4
Duursaam Benoordenhout	Benoordenhout	2018	Benoordenhout takes control itself and has written its own Wijk Warmte Visie. A Vision stating how Benoordenhout will switch from natural gas to sustainable heat in the future. We look at what is smart to do yourself, and what is more beneficial together. https://duursaambenoordenhout.nl	#5

Table 3: The first five local energy initiative cases of the total set of nine.

Initiative	Neighborhood	Start year	Short description	Interview #
Gasvrij Scheveningen	Scheveningen	2017	Gasvrij Scheveningen was created to support the residents of Scheveningen in making their homes more sustainable. We regularly organize meetings, workshops or theme evenings to inform even more Scheveningers about the latest developments. https://www.gasvrijscheveningen.nl	#6
Duttendel & Wittenburg	Duttendel & Witteburg	2019	Now that the first steps in the energy transition are being taken in a number of neighborhoods, the board of neighborhood association Duttendel Wittebrug thought the time was right to start mapping out the possibilities together with the neighborhoods of Stolkpark, Archipel-Willemspark and Buurtschap Centrum 2005 and consequences of the energy transition for these 4 neighbourhoods. https://www.duttendelwittebrug.nl/	#7
Bloemen- en bomenbuurt (BLOB)	Bloemen- en bomenbuurt	2018	The working group was set up during the theme evening on Sustainability and Energy Saving in January 2018. This working group wants to collect and share information with local residents so that our neighborhoods become less dependent on fossil fuels. https://bomenbuurtonline.nl	#8
Rivierenbuurt/ Spuikwartier	Rivierenbuurt/ Spuikwartier	2018	We focus on Energy Transition. Energy transition is the switch from natural gas and fossil power to other CO2 neutral and renewable energy sources. By establishing the Energy Point, we also hope to reach those people for whom it now feels too far away. https://www.brs-denhaag.nl	#9

Table 4: The other four local energy initiative cases of the total set of nine.

possible for each initiative. Some interviews were held online via MS Teams or a phone call because of the COVID-19 crisis.

The interviews were recorded when agreed by the interviewee. After the interview, the recording was transcribed automatically by the Microsoft Office 365 program Word. Out of these multiple transcripts, a combined Excel file was created. The answers (sometimes a bit summarized, sometimes also with quotes) were written down for each interview per question asked in the Excel file. In total, seven interviewees agreed on the recording and transcribing of the interview, and during two interviews, only notes were made directly into the Excel file.

5.4.1 Questions semi-structured interviews (60-90 minutes)

THE INITIATIVE

1. Who are you, what is your role in the energy initiative and how are you working on the energy transition in The Hague? (ORGANIZATION)
2. Why was the energy initiative started and how did it go and how has it developed? (ORGANIZATION)
3. How is the initiative organised? How are decisions made? (ORGANIZATION)
4. What kind of activities does the initiative do? (DOING)
5. Do you also have goals? (DOING)
6. Who is your target audience and how do you reach them? (DOING)
7. Why is the energy transition important to you and what are important issues (bottlenecks, problems, opportunities) according to you? (FRAMING)
8. What are your ideals with regard to energy transition? What do you believe in as an initiative? What is your vision? (FRAMING)
9. How do you acquire the knowledge needed to achieve your goals and carry out activities? Do you also share knowledge with others? (KNOWING)
10. How has the COVID-19 crisis affected the initiative and activities? And how did you deal with that?

INTERNAL RELATIONS

1. How would you describe the dynamics of the social relations between the members/stakeholders of the initiative? How do you influence each other?
2. Does the initiative help empower people to tackle problems themselves?

STAKEHOLDERS

1. Who are important stakeholders in the Energy Transition and how is there contact or cooperation with these stakeholders? [resources, knowledge, money, time, etc.] How did this network come about?
2. Does the initiative share a vision with stakeholders?
3. Why does the initiative have no connection with the following stakeholders:_____?

MUNICIPALITY OF THE HAGUE

1. I would like to zoom in on the contact between the municipality of The Hague regarding the Energy Transition and the initiative.
2. What do you think of the municipality's aim and approach for the Energy Transition?
3. What makes you super happy and what could be done differently or better? [substantive, process, management aspects]
4. If you were 'wethouder', how would you go about it and what would you do?
5. What do you think of the participation of energy initiatives in the Energy Transition in The Hague? What is going

well and how could participation be improved?

SYSTEM/INSTITUTIONAL

1. Now if we look back at the whole system, in terms of the energy system:
2. What changes in the current energy system should be implemented?
3. Is there a need for new roles or changes to existing roles?
4. What would the ideal network/ partnership for the initiative look like?
5. To what extent do you feel that the initiative is part of a social movement? [What would this stand for?]
6. What is the attitude of citizens towards the Energy Transition?
7. What other social developments and problems does the neighbourhood/ district have to deal with?
8. For which of these social developments is there a connection with the initiative and perhaps a task for the initiative?

BROADER CONTEXT

1. What are the main drivers and obstacles for saving and making energy in general?
2. In your opinion, what are positive and negative developments in the energy initiatives sector?
3. How do you think the initiative is impacting wider society at the moment? How far is it from the desired impact?

LOOKING FORWARD

1. What are the biggest challenges for the initiative in the future?
2. What would help the initiative most to move forward?
3. When is the initiative a success?

5.5 DATA ANALYSIS, INTERPRETING AND REPORTING

The data analysis is based on the research areas and elements retrieved from the research framework. For the research areas and elements, see Table 5. Firstly, the data were clustered for each of the research elements. It can be that data is influencing multiple research elements. In that case, the data is clustered for each research element. This data was gathered from the combined Excel file

Area #	Research area	Research element
1	The role and position	New ways of doing, organizing, framing and knowing
		COVID-19
		Empowering people
		Shared vision
		Social movement
2	Contribution's potential	Other Challenges
		Institutional influence on the initiatives
		Influence of the initiatives on the institutions
		Changing the energy system
		Societal impact
3	Intervention spot	Satisfaction about the municipality
		Dissatisfaction about the municipality
		Relationship between initiatives and the municipality

Table 5: The complete set of research areas and research elements.

and the transcripts. After clustering the data per research element, this specific data set for one research element was analyzed. There is looked for a connection between the data or repetition of data. Out of these connections and repetitions, insights were gathered and defined as can be found in Appendix 7. An overview of the data analysis is presented in Figure 24. The following chapter presents the results of the data analysis. The insights are presented per case study and then as a cross-case analysis.

5.6 THE PRESENTATION OF THE RESULTS

This chapter has presented the research framework, methods, and analysis. As mentioned, the following chapter contains the results for each of the research elements from the research framework. The results are presented per initiative and for the total. Combining results per research element will provide insights into the different research areas. Eventually, the role and position of the initiatives will be clarified based on these insights and the potential of their contribution to the Energy Transition.

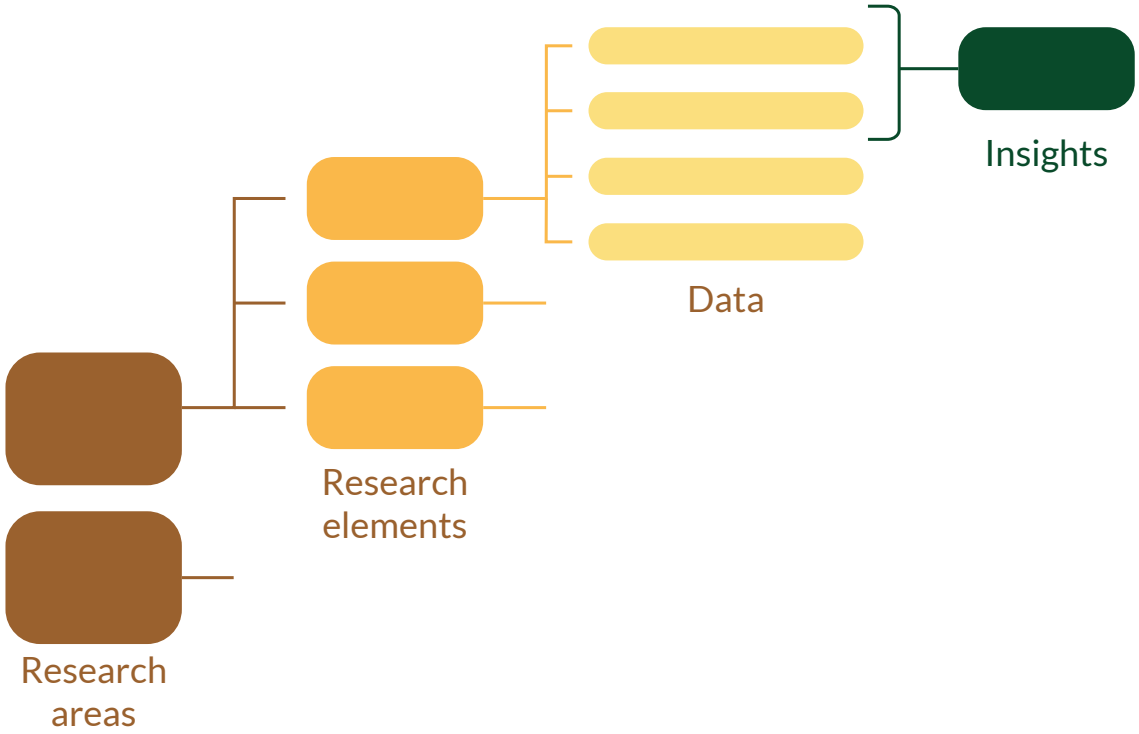


Figure 24: An overview of the data analysis starting from the research areas and resulting in insights based on the data per research element.

6. THE RESULTS ON THE ROLE, POSITION AND CONTRIBUTION OF THE INITIATIVES

The empirical results of the second phase of this research were obtained by nine semi-structured interviews with different local energy initiatives in The Hague. The previous chapter describes the research framework and methods. The research framework exists out of three research areas, each existing out of multiple research elements. The results in this chapter are presented based on these research elements. Firstly, the nine cases are presented. Secondly, the results are presented for each of the cases based on the research elements. Lastly, a cross case analysis is presented based on the research elements.

6.1 THE NINE CASE DESCRIPTIONS OF NINE LOCAL ENERGY INITIATIVES

6.1.1 Vogelwijk Energie(k)

Vogelwijk Energie(k) is a local energy initiative in the neighborhood Vogelwijk. The initiative was started 11 years ago by a goal-oriented group of people. The group adopted the wind turbine of Eneco at the Southern Pier Head. For Eneco, the wind turbine was no longer cost-efficient, and they did not want to change the blades. As a result, around 100 participants adopted the wind turbine. Now, these citizens have some kind of virtual ownership. The wind turbine is still in the name of Eneco, but financially it is owned by the citizens. Because of participation, they kept the wind turbine alive. The initiative grew out to a foundation. Only, because of the construction of a foundation, the board was allowed to do everything they wanted. Therefore, they changed it to the construction of an association. An association needs to take responsibility for its members. There is a general member meeting, and some things need to be voted about. Besides the association, there are also two corporations. These two corporations own solar roofs. Furthermore, there is also a working group focused on heat transition.

The Vogelwijk Energie(k) initiative is meant for the whole neighborhood, circa 2000 households. Most of the households are owner-occupied homes, a few are part of VvE's, and there are no housing corporation homes. There is a neighborhood association with 1800 members. So, almost all citizens are part of this association. The initiative has been stated separately on purpose but uses the channels of the neighborhood association to reach the citizens. The initiative itself has 200 formal members. The initiative's goals do not change from the national Energy Transition goals. The initiative is working on the parts about the building environment and electricity. Furthermore, they noticed that the government's information was not reaching everybody. Here, they see a role for the initiative, supporting the dialogue between the municipality and citizens. *'We want to inform and activate people.'* (#1) For example, they have energy coaches who can advise citizens. The information we provide the citizens with is partly the municipality's information that we talk along. However, another part is more specific information, especially for our neighborhood and types of houses. *'The municipality finds it hard to provide this specific information and provides the citizens with more generic advice.'* (#1) Also, the initiative is thinking along about suitable solutions for the neighborhood and is doing actions with the neighborhood itself. *'It seems easier to do things with your*

neighbors than to do the things assigned by the municipality or government.' (#1) However, they do not want to take over the tasks of the municipality. The initiative should not come in place of the neighborhood-oriented approach. *'As an initiative, we help along, but there should be a separate participation approach besides us. We can advise about the approach and the suitable tone of voice'.* (#1)

Besides the neighborhood association, the initiative is connected to other local energy initiatives of other neighborhoods. This contact goes via the municipality, Duurzaam Den Haag, or directly with the neighborhoods. Other stakeholders are the municipality *'at least ten different departments,'* (#1) Duurzaam Den Haag, The Hague Energy network, and companies like installers and energy consultants. At least, there is a connection with Eneco. In the first place, because of the wind turbine, but there are also some ideas about a project concerning the heat transition together with the neighborhood Statenkwartier.

The Vogelwijk Energie(k) sees itself as part of a social movement *'That [we are part of a social movement] is undeniable. I have to say yes to that.'* (#1) However, they also state that we need to handle this with care because, as earlier mentioned, the initiatives cannot take over the dialogue between the municipality and citizens. *'The largest challenge for the initiative is the ego motives of people'* (#1) so, that people still think that it is too expensive or old people and think that this could last as long as they do'. Another ego motive is that people are too busy or have other priorities. Two other challenges are the overload of information and the low capacity of the installers. When there is so much information, *'some people drown in the information offer, what is it for?'.* (#1) Then when people know what they want, the low capacity of the installers is slowing things down. *'We can say that people need to start isolating, but if they want to, they come at a long waiting list from the companies'.* (#1) Then a more general challenge, which is reaching people, better communication. *'Furthermore, I could only think about opportunities, so that is actually really positive'* (#1) states the initiative. The initiative thinks it is already a success. They have a final goal, the Energy Transition. However, this should be reached with the whole municipality together, and when things become too abstract, it is hard for people to imagine. '*We prefer to look at the coming two years. That is kind of our horizon.'* (#1)

6.1.2 Buurt Energie Statenkwartier (BES)

The initiative Buurt Energie Statenkwartier (BES) has arisen out of the neighborhood association of the neighborhood Statenkwartier, and they still work together. Several neighbors were working on the sustainability of their homes, and they founded BES. They wanted to be independent and not part of the neighborhood association, part of the association, or otherwise. The initiative has 150 formal members. Currently, 500 citizens in the neighborhood are reached via the BES newsletter, and several hundred have visited the neighborhood meetings. The initiative is focused on all citizens living in Statenkwartier, and they are reached via the local newsletter, the website, flyers, and digital newsletters. The goal of the initiative is to make the neighborhood more sustainable. *'We are worried about the future, what is going on. We as citizens need to play a role in this. It is crucial to find ways to get citizens engaged and involved.'* (#2)

The initiative is executing several activities. They want to share knowledge with the citizens and make them able to

join the Energy Transition. They organize walk-in hours for questions, information evenings, and energy coaches to support people. Further, they also have projects running for collectively buying solar panels. To gain knowledge, the initiative does research themselves or lets external parties perform research. This research is essential because they want to become an equal partner for stakeholders to talk to. The initiative is connected to several stakeholders: the municipality, the province, Eneco, Stedin, other neighborhood initiatives, Duurzaam Den Haag, and small to medium sustainability companies like installers.

Also, BES is seeing itself as part of a social movement. *'I take it is only possible for us to do what we do if something social has taken place. Individualization and better technologies have made it more possible to participate'.* (#2) The Energy Transition is becoming a theme in people's lives. However, this is also still a challenge to get people involved and deal with resistance from people. The initiative has the ambition to organize itself to get a voice at the table with the municipality, Eneco, and Stedin. However, it is hard as they explain themselves *'with commercial parties, you need to offer something, bring supply and demand together.'* (#2) The initiative is already proud to say it is a success. They have the most significant number of solar panels in The Hague. Much isolation. However, it would be even better if the citizens could create a new sustainable energy system in the neighborhood by using participation. BES has a focus group on the heat transition, which transformed into an initiative on its own (see Section 6.1.3).

6.1.3 Statenwarmte Statenkwartier

Statenwarmte was the first part of the BES initiative but later turned into its initiative in a foundation. The initiative is researching the opportunities for a sustainable heat solution for the neighborhood Statenkwartier. They do the research themselves and hire experts to execute research for them. The eventual goal is a natural gas-free future for and through the citizens of Statenkwartier. The initiative is also looking into citizens' role in these future solutions and if this can be as active as possible. They call it Citizen Participation 3.0. Their motivation to do the research is because they want to get the citizens more involved, and they are curious if they can come up with better solutions than the municipality.

Besides doing research, the initiative is providing the citizens with information. They organize neighborhood meetings and do surveys among the citizens and the municipality. To get a more honest and representative opinion, the initiative organized a critical advisory group existing out of citizens from Statenkwartier.

The stakeholders of the Statenwarmte initiative are the municipality, the other initiative of the neighborhood BES (see Section 6.1.2), Duurzaam Den Haag, Hoogheemraadschap Delfland and DWA Gouda. The most significant challenge of the initiative is to stay enthusiastic as members and keep the initiative going. The initiative sees itself already as a success. There are many people involved. Many meetings were organized, and they saw themselves as having a very high level of citizen participation. Furthermore, the project and research are already done. The next step is to work out the research with the municipality and stakeholders, so it can eventually be brought into practice and execution.

6.1.4 Stichting Hernieuwbare Warmte Ypenburg

The neighborhood of Ypenburg is divided into different parts with different neighborhood associations. These parts are brought together via one platform for the neighborhood of Ypenburg. At some point, this platform wanted to do something with sustainability and looked into solar panels and other possibilities for clean energy. Out of this interest, the initiative Hernieuwbare Warmte Ypenburg has arisen. This initiative is an independent foundation. It is working autonomously and covers all parts of the neighborhood Ypenburg. The initiative is doing multiple activities. They have done two example houses to show citizens what could be done. They did research and testing projects like the ventilation project with the Haagse Hogeschool. This project was about the ventilation systems in the houses, which created some heat loss. The largest ongoing project the initiative is working on is the future sustainable heat solution for the neighborhood to become natural gas-free. The initiative is connected with the prominent players Stedin and Eneco on this subject. Also, the municipality is involved in the conversations. These three players and the initiative even formally confirmed collaborating on paper. Sometimes the initiative uses its connection with Stedin and Eneco to give direct feedback from the citizens. For example, there are complaints about the current way of doing things. There was some energy loss in the infrastructure, and the citizens were paying for this energy loss. The initiative has made this negotiable with Eneco and made them change this.

The large heat transition project is connected to the initiative's primary goal. The main goal is to create a CO2-neutral neighborhood heat system before 2025 with the requirements of safety, reliability, the same comfort as the current system, and the exact costs. They want to reach this goal with, for, and through the citizens of Ypenburg and want to let them participate in the project. *'The foundation HWY is sharing knowledge and skills about renewable heat with the citizens and is motivating active citizens to become part of the project.'* (#4) The initiative wants to have a crucial role. *'The initiative sees itself as the middleman between the people of interest [the citizens] and the project executors.'* (#4) The different stakeholders of the initiative are the citizen platform Ypenburg, the municipality, province, Eneco, Stedin, Haagse Hogeschool, and the European Commission. This last stakeholder is providing the initiative with a subsidy for a geothermic source in the future. However, the initiative needs the collaboration of the municipality to get this European subsidy.

The initiative sees the VvE's as one of the most significant challenges. The VvE's are complicated, and the same goes for the housing corporations. The most significant challenge of all is getting the trust of the citizens. In the end, they are the ones who need to say yes to the changes and the transition towards the new energy system. *'We are trying to handle this [gaining trust and support] and are thinking about creating something like a selector [kind of electoral pointer].'* (#4) The initiative is a success when the goal of 2025 is reached. The awareness of urgency is essential. They try to make this clear with their stakeholders as well. *'I said to Eneco: "if we are not gonna reach the 2025 goal, what am I doing here?"'.* (#4)

6.1.5 Duursaam Benoordenhout

The initiative Duursaam Benoordenhout came into existence in 2018. The initiative involved a group of people who did not want to wait for the municipality's plan

but wanted to take control themselves. The focus is on all the citizens of the neighborhood Benoordenhout. The citizens are reached through the website, surveys about collective heat systems, Facebook, newsletters, poster action, and the neighborhood association newsletter, which reaches 1500 people. The initiative's goal is to make the neighborhood more sustainable and create a heat transition vision and neighborhood Energy Transition plan. They want to take the lead in thinking about a vision for the neighborhood, what is intelligent and advantageous to do. Besides creating this vision, the initiative performs other activities as well. They provide energy coaches to the neighborhood. In two years, more than 200 requests were answered. An energy house was created around activities about energy generation, energy preservation, financial opportunities around energy, learning and communicating, and a campaign team. When creating the heat transition vision, they organized meetings in the neighborhood with sometimes 120 people. Besides creating their vision, they also provide information to the municipality and function as a critical feedback group.

The stakeholders involved with the initiative are Shell, Stedin, Tauw, Tygron, municipality, province, other local energy initiatives, local small to medium companies, hou van je huis, fonds 1919, ANWB, the woonwijzerwinkel, and the neighborhood association of Benoordenhout. The municipality is an important stakeholder. The initiative wants to be the link between the citizens within the neighborhood and also between the citizens and the municipality. The initiative wants the citizens to know what is going on and what they could do themselves. They kind of translate the municipal plans to the citizens. *'The most important thing is that everybody gets the chance to be informed and to speak their minds. The initiative also aims to make citizens'* (#5) opinions clear to the municipality. *'There is not a lot of confidence in the municipality by the citizens. The initiatives can play an important role in gaining the citizens' trust again'.* (#5)

The initiative knows multiple challenges. The topic around collective ownership is still complex, and the municipality's heat transition vision will also have influence. In the meantime, the initiative wants to gain as much neighborhood support as possible, but you must be concrete to gain support. Being realistic and concrete is essential, including knowing about developments and new techniques. The success of the initiative depends on their representativeness and their neighborhood support. They also want to think about a cooperative in the long term, but this highly depends on the local community's attitude. They also need enough intellect and capacity to realize this.

6.1.6 Gasvrij Scheveningen

The neighborhood association in Scheveningen wanted to do something with sustainability. Out of this interest, the initiative Gasvrij Schevening is started. When they started the initiative got money from the municipality. They made a website, a movie clip, and started a newsletter. The goal is to inspire, inform, activate and motivate. They want to support the citizens when making their homes more sustainable. In the end, they want to be natural gas-free. However, they say, *'everything at the end natural gas-free is not a goal; this is the horizon.'* (#6) The initiative is reaching for their goals with multiple activities. They organize neighborhood meetings, workshops, and theme nights. They educated people to become energy coaches and made a connection with HEBA. Other things they do are actions

like Scheveningen 70 to reduce the CV temperature, promote savings actions of the municipality, and develop tools and websites. A tool that was developed is helping people to select the things they can do considering sustainability in their specific homes. One of the websites includes several people's homes as examples for sustainable interventions, including videos and photos.

The initiative targets everybody in Scheveningen, which is about 60.000 people. They reach them via newsletters, websites, or giant advertisements in newspapers. These 60.000 people include people from rental houses, VvE's, sports associations, and other associations. Younger people seem hard to reach out to. The initiative wants to think about the Energy Transition in the frame of the triggers and motivations of people. *'This is sustainable... is nothing. It is a container definition. However, what does sustainability mean for you?'.* (#6) Energy Transition is about each personal experience and story. 'I do not want to talk about technology. Everybody is talking about technologies. This is uninteresting'. (#6) Furthermore, they want to share knowledge and favor a cooperative society. Stakeholders of the initiative are the municipality, province, small and medium companies like the installers, thrift shops, neighborhood associations, and other initiatives. They also want to expand the network among citizens so that they can help each other.

When asking the initiative if they are part of a social movement, they say, 'I think so, but more I hope so!'. (#6) They state that it should not be about the CO2 problem but about what does feel good. 'I think it is about asking the right question.' (#6) The Energy Transition should be about framing. In too many cases, the Energy Transition is framed as a problem. The initiative has to be presented more positively and more promising. The municipality should say something like *'I give you more opportunities, so we delay the deadline to 2030, and then we get even a better future'* (#6) instead of *'It is a burden, we need to delay because we are not going to make it.'* (#6) The initiative states, *' what nonsense to say the second thing... what a wrong way of framing...'.* (#6) This framing is one of the challenges of the initiative. Another challenge is to become less dependent on the neighborhood association. *'All those different meetings are horrible.'* (#6) They want to keep their network growing without drowning in the foundation. The initiative is even more successful if they contact Stedin and other large companies. Also, they want to expand the 'sustainable interventions examples' website to other neighborhoods in The Hague and make their intervention tool available for other municipalities.

6.1.7 Duttendel & Wittenburg

Within the neighborhood Duttendel & Witteburg, some citizens became aware of the Energy Transition and felt the need to react. The neighborhood association has connected to three other neighborhoods (Archipelbuurt, Stolkbuurt en Centrum 2005) to discuss sustainability. They started the initiative in 2018. Especially since many things need to change behind the door, a top-down approach is not always suitable. Therefore, a bottom-up approach is needed, and the initiative can be part of this bottom-up approach. They work together with the other three neighborhoods because they wanted to be *'large enough to be interesting for the municipality to talk to.'* (#7) However, the initiative's focus lies on everybody in the neighborhood Duttendel & Wittenberg, around 1200 people. They have already sent their newsletter to 430 people. *'We work together, but still, we*

have a neighborhood definition document for each of the neighborhoods individually.' (#7) There are considerable differences between the neighborhoods. Besides the definition document, the initiative provides a continuous stream of information about the Energy Transition. This is continuous because, for each person, the right time is at another moment. They do not provide advice directly, but we provide the citizens with information and knowledge. The initiative does not have energy coaches themselves but lends them from other initiatives of other neighborhoods close by. The initiative has done projects considering isolation and in combination with the isolation campaign of the municipality. They did solar panel actions with walk-in hours. Furthermore, groups are also working on greening and mobility as separate topics. The initiative also has a technical group working on the Energy Transition before the front door, so more about the heat transition.

The stakeholders of the initiative are the municipality and other neighborhoods. Instead of figuring out everything themselves, they try to learn a lot from these other neighborhoods. When asking if the initiative is part of a social movement, the initiative says, *'in our neighborhood, a social movement is not yet the case.'* (#7) This mostly is the result of all the houses standing alone. However, we are trying a bubble system to connect the same-like houses. However, it is hard to make something happen and keep it going. This 'keep it going' is also a more general initiative challenge. Further, getting younger people involved in the initiative is also challenging. The initiative is a success if the long-term goal is reached. So, if they can state that around 2030, most of the houses in the neighborhood have taken the steps towards more sustainable homes and are transition ready.

6.1.8 Bloemen- en Bomenbuurt (BLOB)

The initiative BLOB of the Bloemen- en Bomenbuurt neighborhood started during the team night about sustainability and energy preservation in January 2018. Part of HeBa (Haagse EnergieBespaarders). The initiative wants to collect and share information and ideas about sustainability and energy preservation with citizens from the neighborhood. Their goal is to make the neighborhood less dependent on fossil fuels. The homes in the neighborhood were primarily built in the twenties and are not well isolated. The target group of the initiatives is all the citizens of the Bloemen- en Bomenbuurt. The citizens are reached via flyers, Facebook, digital newsletters, neighborhood apps, and significant organized energy days. Besides the energy days, they also organize energy parties (evenings). The initiative has already organized 220 of those parties. Furthermore, the initiative is also educated and works with energy coaches. They execute heat scans. According to the initiative, the municipality's participation is mainly focused on awareness, and the initiative wants to focus on what is already possible to do. They began with solar panels because this seems like a good start.

The stakeholders connected to the initiative are the municipality, HEBA, and Haagse stroom initiative, a corporation. The initiative finds it hard to connect with small to medium companies because they do not want to participate in commercial parties. Therefore, Eneco is also not an interesting party for them. When asked the initiative if they are part of a social movement, they said, *'I do not want to punch above our weight, but it is a social movement in some cases.'* (#8) However, the initiative is struggling with its position. They state that

'the initiatives are used to reach the citizens, but in an ungrateful way, which civil servants do not even notice.' (#8) The initiative states that they should be working on awareness and informing. This role division should be clear. However, at this moment, they are also active in the execution of policy and, for example, solar panels. They do this because nobody else is doing it. The initiative sees itself as a success when there are 20 VvE's who want to collectively put solar panels on their roofs. Further, they want two things to happen each year, like the energy days. At last, they state that 'it is a success when things are happening, action is taken, and houses are isolated.'

6.1.9 Rivierenbuurt/Spuikwartier

The initiative of the Rivierenbuurt/ Spuikwartier is still in the developing phase. This also is because the neighborhood is complicated. The neighborhood knows a large group of lower incomes. Only 20% of the neighborhood are owner-occupied homes, and at least 40% is social rent. The initiative's goal is to provide people with a voice, inform them about the Energy Transition, and give them a choice. Because of the composition of the neighborhood, the initiative is mainly focused on people with a lower income and tries to help, especially them. These people are reached via the local newsletter, directly when biking through the neighborhood with the initiative's cargo bike, or via flyers. A strong word-of-mouth advertisement must be developed. This could develop some more. The initiative has created an energy point in the neighborhood and created awareness. They use this as a start, and from there, they try to do some interventions. The initiative states, *'the Energy Transition looks like a threat for people, because the Energy Transition is expensive.'* (#9) The initiative wants to make it less threatful. They want to talk about the overall ideal and saving the planet. Furthermore, they want to clarify that sustainability also has to do with food and consumption, actually everything. They want to make people more aware of the energy they use and use it less.

The most important stakeholder of the initiative is the municipality. Further, they have contact with different schools. Also, other citizen initiatives in the neighborhood are stakeholders. For example, they work together with an initiative working on the greening theme. Other stakeholders are Duurzaam Den Haag and small to medium companies like the installers. The housing corporations are also an essential player in this neighborhood. However, the initiative states, *'the housing corporations are doing their own thing too much at this moment. It would be great if there were at least a conversation, a start with clear intentions, but there is no conversation at all.'* (#9) The initiative states that the start of Duurzaam Den Haag and the energy coaches in collaboration with the municipality could represent a social movement. However, this social movement is still minimal, and it mainly represents the wealthier neighborhoods. The poorer neighborhoods feel less represented. In other neighborhoods also the neighborhood association is a stakeholder of the initiative. In this case, the neighborhood association creates a challenge for the initiative because there is much disagreement. People do not feel the urge to lose energy in that situation and want to be fixed first. This is slowing the initiative down. In the meantime, the initiative states that it is a success if it is still going next year. They want to work together with Duurzaam Den Haag and connect with a devoted civil servant of the municipality to help them. In the end, they also need a critical mass of citizens to be able to continue. This is still missing.

6.2 THE RESULTS PER LOCAL ENERGY INTIIATIVES

The results are presented using the research elements of Chapter 5. It should be said that the 'COVID-19' and 'Empowering people' elements are not conceptually equal to the other research elements. The 'COVID-19' element is a contextual factor. The 'Empowering people' research element is part of the new ways of doing, organizing, framing, and knowing and the effect on the people the local energy initiatives reach. The results are presented in Tables 6 to 32.

Initiative	New ways of doing
Vogelwijk Energie(k)	The initiative owns two solar panel cooperatives. Besides, these two there is a cooperative concerning a wind turbine. They have citizens who are educated to work as energy coaches. The initiative wants to inform and activate people. They reach people via neighborhood association and have 200 formal members as initiative. It is all about collaboration and going in the right direction together. The initiative also has a group working on the heat transition.
Buurt Energie Statenkwartier	The initiative organize consultation hours to provide information and collective purchasing projects concerning clean energy. They do a lot of research and let experts do research for them. Furthermore, there are multiple citizens educated as energy coaches. They reach people via the website, local newsletter, flyers, consultation hours, and online newsletters.
Statenwarmte	The initiative is mainly doing research into possible future heat solutions for the neighborhood, inform citizens and organize many neighborhood meetings. They reach people via neighborhood consultation, newspapers and door-to-door walks. They want the give the citizens a larger role in future energy solutions (citizen participation 3.0 they call it).
Stichting Hernieuwbare Warmte Ypenburg	The initiative created two example houses with all kinds of sustainable interventions integrated. There are multiple projects executed like the ventilation project. They do research and tests. They are making connections with the large players and complaints about large energy companies are collected and pass it on. They inform people in all kinds of ways. They reach people via a website, news letter and the umbrella platform Ypenburg. The initiative is also working on the creation of a geothermal clean energy source and looking into solar panels possibilities.
Duursaam Benoordenhout	The initiative organizes multiple consultation meetings in the neighborhood and there are multiple energy coaches active. They also initiated an energy house with these activities: energy generation, energy preservation, financial possibilities, campaign team, learning and communicating. The initiative also created is own heat transition vision. They reach people via the website, newsletters, surveys, facebook, poster action and more.
Gasvrij Scheveningen	The initiative does combined action with the municipality for energy preservation and the reduction of the heat level of the CV. Furthermore, they created multiple website to provide people with knowledge and inform them. Some citizens are educated to work as energy coaches for fellow citizens in the neighborhood. The initiative wants to inform, inspire, activate and motivate. They reach people via newsletters, advertisements and multiple websites.

Table 6: The results per local energy initiative for new ways of doing (case 1, 2, 3, 4, 5 and 6).

Initiative	New ways of doing
Duttendel & Wittenburg	The initiative provides information and interesting network relations. They organize projects concerning isolation and solar energy. Also, they do campaigns around isolation. They mainly reach people via e-mails and letters.
Bloemen- en bomenbuurt (BLOB)	The initiative wants collected all research what is done already and do a 'groene regen test' and focus on the possibilities concerning solar energy. There are already to school that have Haagse stroom. Furthermore, they organize energy parties to inform people in a accessible way. They reach people via the website, flyers, neighborhood newsletter, digital newsletters, facebook and when they organize the big energy day each year.
Rivierenbuurt/ Spuikwartier	The initiative has created an energy point in the neighborhood and multiple schools and neighborhood buildings are connected. They want to create awareness, inform people, and provide them of a choice. Also, they want to give people a voice. The people are reached via article in the local newspaper, in real life, flyers, and just telling around. They focus mainly on people with lower incomes.

Table 7: The results per local energy initiative for new ways of doing (case 7, 8 and 9).

Initiative	New ways of organizing
Vogelwijk Energie(k)	The wind turbine cooperative exists out of more than a hundred citizens. Furthermore, the initiative has members and therefore organizes general assemblies, including votes. The initiative also refers to other initiatives in other neighborhoods.
Buurt Energie Statenkwartier	An initiative is a group of ambitious citizens of the neighborhood, and they work together with the neighborhood association. They want to make decisions together with all the citizens in the neighborhood, and especially the citizens providing critical feedback are helpful.
Statenwarmte	The active members of the initiative were gathered via door-to-door walks. They organized a group of citizens who function as critical mass and provided feedback on all activities.
Stichting Hernieuwbare Warmte Ypenburg	The initiative functions as an umbrella platform connecting all parts of the neighborhood. All neighborhood parts have their association, so the initiative works as a glue between them.

Table 8: The results per local energy initiative for new ways of organizing (case 1, 2, 3 and 4).

Initiative	New ways of organizing
Duursaam Benoordenhout	The initiative is an organization existing out of multiple teams which have an assembly once a month. There is a board, volunteers, six different subject teams, a campaign team, energy coaches, and a team working on the heat transition. They organize meetings with more than 120 citizens of the neighborhood. Furthermore, they use a critical feedback group that has arisen out of six neighborhoods.
Gasvrij Scheveningen	The initiative arose from the neighborhood association when they wanted to do something with sustainability. Every Wednesday, there are meetings with members and everybody who wants out of Scheveningen once a month.
Duttendel & Wittenburg	The initiative is working together with three other neighborhoods (Stolkpark, Archipelbuurt, Centrum 2005) to talk about sustainability and create more mass to be interesting for the municipality to talk to. They have discussions with these four neighborhoods together but still create definition documents per neighborhood separately.
Bloemen- en bomenbuurt (BLOB)	The initiative is part of energieparty.nl and Heba (Haagse EnergieBespaarders). There are already 2020 EnergyParties organized in four years. The initiative is also educating others to use the same method in collaboration with the municipality.
Rivierenbuurt/ Spuikwartier	There are only a few actual active members of the initiative. However, they have many connections with initiatives working on other themes. In this way, they influence and help each other.

Table 9: The results per local energy initiative for new ways of organizing (case 5, 6, 7, 8 and 9).

Initiative	New ways of framing
Vogelwijk Energie(k)	The initiative sees that there are differences between ego motives and eco motives. Furthermore, they see that there is much knowledge. However, the challenge is finding specific valuable knowledge for your specific neighborhood and houses. The initiative is trying to generate this more specific knowledge.
Buurt Energie Statenkwartier	The initiative thinks that the citizens are the most important issue since they are the ones who need to change. Therefore, it is crucial to reach the citizens, motivate them and show urgency.
Statenwarmte	The initiative states that a heat solution cannot come for just 20 houses in a neighborhood with 5000 houses. It is not possible to combine four different infrastructures next to each other. Therefore, a solution should come for the whole neighborhood (and maybe even on a higher level). Furthermore, they state that the heat transition is the real Energy Transition since this affects how people live and experience their houses.

Table 10: The results per local energy initiative for new ways of framing (case 1, 2, and 3).

Initiative	New ways of framing
Stichting Hernieuwbare Warmte Ypenburg	The initiative looks at the Energy Transition with a more broad perspective. They state that milieu and greening also are connected to the Energy Transition. Furthermore, they see that safety, comfort, and affordability are the most important Energy Transition topics for citizens.
Duursaam Benoordenhout	The initiative wants to take control in their own hands together with citizens. They want to think about what is essential for citizens and therefore mainly about which solutions are intelligent, affordable, and advantageable.
Gasvrij Scheveningen	Furthermore, they state that everybody has their motivations and that people are busy with their living environment and life. The initiative is in favor of a cooperative society. It should be more about what people experience, how does it influence your specific situation, instead of the technical outcome.
Duttendel & Wittenburg	According to the initiative, it is important to keep a continuous information stream towards citizens since it is very individual dependent, which is the right time to do sustainable interventions. Most of the time, people combine this with a renovation or relocation. Furthermore, the state that the neighborhood perspective with their typical types of houses is important. Some old houses are not suitable for some heat solutions.
Bloemen- en bomenbuurt (BLOB)	The initiative states that the current presentation and solutions of the Energy Transition are not attractive for citizens. Besides, many people are not thinking about the Energy Transition at all. It is important to think more about the advantages people could experience and focus on these. Furthermore, the initiative wants to work with citizens in the neighborhood and collect helpful information applicable to their neighborhood.
Rivierenbuurt/ Spuikwartier	The initiative sees that the Energy Transition is no priority for the citizens in their neighborhood. They do not see why people think about sustainable energy sources while hardly paying their current energy bills. The Energy Transition seems more a threat for people. It is important to frame it so that people understand it and can do something in their situation. Furthermore, there is too much focus on the technical side and limited on the social side.

Table 11: The results per local energy initiative for new ways of framing (case 4, 5, 6, 7, 8 and 9).

Initiative	New ways of knowing
Vogelwijk Energie(k)	The initiative is mainly spreading the municipality's information so that all citizens are up to date. Furthermore, they collected much specific knowledge about the neighborhood and the type of houses. While the municipality provides mainly generic knowledge and advice, the initiative wants to provide more specific knowledge.
Buurt Energie Statenkwartier	The initiative is doing much research. They share their knowledge via consultation hours, events, and energy coaches. Further, there are also multiple professionals connected to the initiative who provide knowledge.
Statenwarmte	The initiative exists out of many intelligent people with a technical background. This knowledge is shared via all kinds of channels. There are also information evenings and walk-in hours.
Stichting Hernieuwbare Warmte Ypenburg	The initiative has members with a lot of background knowledge to share. Furthermore, they do much research or hire experts.
Duursaam Benoordenhout	The initiative is providing the citizens in the neighborhood with knowledge. Multiple energy coaches mainly do this.
Gasvrij Scheveningen	The initiative is sharing as much knowledge as possible via multiple websites. These websites form together an open knowledge/information platform.
Duttendel & Wittenburg	The initiative's knowledge is mainly gained to become invested, talk about it, visit numerous websites, and personal interest and motivation.
Bloemen- en bomenbuurt (BLOB)	The initiative is sharing knowledge via Energieparty and multiple energy coaches. Furthermore, they refer to consultation hours of other initiatives.
Rivierenbuurt/ Spuikwartier	The initiators of the initiative are all intelligent people interested in the Energy Transition. They share knowledge with citizens via all kinds of channels and want people to become aware of the Energy Transition.

Table 12: The results per local energy initiative for new ways of knowing.

Initiative	COVID-19 influence
Vogelwijk Energie(k)	This presented both disadvantages and advantages. Although the physical meetings could not occur, people probably also came to the digital meetings, which would not have gone to the physical ones. However, of course, this also applies the other way around. In general, we feel that it has reduced the effectiveness somewhat. There has been some delay, but you see that happening throughout The Hague, for example, the energy advisers who visit people's homes.
Buurt Energie Statenkwartier	The initiative could not come together physically, which is necessary for good teamwork. In addition, it has undoubtedly had a negative effect and slowed things down.
Statenwarmte	The consultation hours and neighborhood consultations could no longer occur, which was annoying. However, the neighborhood consultations via Zoom continued as usual. It was all just a little different. So it did have an impact.
Stichting Hernieuwbare Warmte Ypenburg	Research results do not always provide a good picture of this period and are less valuable. These types of studies may need to be repeated or extended to compare the periods.
Duursaam Benoordenhout	-
Gasvrij Scheveningen	The online activities could continue as usual, in terms of websites, etc. Furthermore, the actions around Scheveningen 70 were also easy to do.
Duttendel & Wittenburg	It was more complicated because many older adults who usually are there were not online now. They did sort of hybrid form. Usually, 100 people come, but now there are 20. So they were with a too limited amount for decisions.
Bloemen- en bomenbuurt (BLOB)	The crisis had a maximum impact on the initiative. Almost none of the quarterly meetings have taken place, which will be picked up again later.
Rivierenbuurt/ Spuikwartier	The initiative mainly wanted to be at people's homes, which was difficult.

Table 13: The results per local energy initiative for COVID-19 influence.

Initiative	Empowering people
Vogelwijk Energie(k)	-
Buurt Energie Statenkwartier	The initiative wants to bring knowledge, let the citizens participate. They are the most important.
Statenwarmte	The initiative offers the opportunity to gather knowledge (as broad and complete as possible), to have a say, to contribute ideas, and thus also to influence the future solutions of the neighborhood.
Stichting Hernieuwbare Warmte Ypenburg	People want safe, comfortable, and affordable. The initiative tries with energy coaches to give people the opportunity to gather knowledge and to be able to use it. They are also often allowed to participate in pilots, etc. They can also choose to take action and/or contribute to this.
Duursaam Benoordenhout	The initiative wants to be as representative as possible to provide the citizens with a voice via the initiative and also to defend this voice. They state that it is important to start a conversation with the citizens. Furthermore, they are thinking about cooperatives on the long-term. The initiative wants to create a pathway for the citizens in their neighborhood for how to deal with the Energy Transition.
Gasvrij Scheveningen	You have the energy transition. That is the government. Then the energy transaction is the gas companies. Then the energy transformation and that is up to the citizens. The initiative tries to connect residents and help each other. In the end, everything that comes at them can be solved by helping each other. The focus is on the social network. Also, to help people with less perspective for action to move forward.
Duttendel & Wittenburg	The initiative wants to make people aware that something is coming and something needs to be done. So if there is a moment when sustainable interventions can be combined with a renovation, relocation, whatever, then you have to act. They want to give the handles, but the citizens have to want it. Many people are working on it, but many people do not think about it at all, and that is the first step.

Table 14: The results per local energy initiative for empowering people (case 1, 2, 3, 4, 5, 6 and 7).

Initiative	Empowering people
Bloemen- en bomenbuurt (BLOB)	The initiative asks people to think along and to attend assemblies. Furthermore, they organize five events throughout the year and provide the citizens with tips and tricks.
Rivierenbuurt/ Spuikwartier	The initiative's target group is tough to reach and difficult when everything is aimed at MBO+ at a minimum. Then it is already reasonably successful. However, often even at the HBO+ level, this is regularly reflected in society. Our world is not well oriented in that regard. The initiative wants to make sure that everybody can understand the provided information and knowledge.

Table 15: The results per local energy initiative for empowering people (case 8 and 9).

Initiative	Shared vision
Vogelwijk Energie(k)	It can be seen that other initiatives that want more power that does not want anything from Eneco, the municipality, and that find it time to let the cooperative heritage speak for themselves. However, they are struggling with legitimacy and are also trying to adopt an increasingly modest attitude. Politicians now say that it all has to come bottom-up and cooperative and 50% ownership, but these statements are only desirable in the tiny sustainability bubble, but in practice, nonsensical. >> there must be room for cooperative projects because they can also succeed in small cities, but certainly in areas with a more agricultural culture. However, it is not that the municipality does not have to do anything anymore. That is not right. Further, there is absolutely no shared vision between the energy companies >> that is the chaos >> that there is no unity. However, that chaos is necessary for the search for the best solution. Eneco also clearly has two faces, current interests versus ambitions, which do not match.
Buurt Energie Statenkwartier	There is a common starting point, everyone believes in the energy transition. However, a shared vision is a bit difficult. If they already have a vision, the municipality is somewhat different from some other parties. Stedin has made an opening offer, Eneco will again have its vision of The Hague. So the more abstract, the more similarities, but the more concrete, the more differences there are.
Statenwarmte	It depends on how you define vision. They have a shared goal. "You do not want to burn the earth." How you deal with that can be very different. The vision is how you work this out, but that is where things sometimes clash.

Table 16: The results per local energy initiative for shared vision (case 1, 2 and 3).

Initiative	Shared vision
Stichting Hernieuwbare Warmte Ypenburg	For example, the initiative does depend on a company like Eneco, so they have to connect with them with the same interests. However, the partnership has also laid down a kind of vision. That had to come. Eventually, everyone wants to go in the 'right direction. They present a vision, and the other parties have to shoot at it. They would like a neighborhood energy plan, but the municipality thinks this is going a step too far. However, when it is on the table, you force other parties to think about it.
Duursaam Benoordenhout	The initiative states that everything that is not talked through together or shared is qualified as disturbing, but is happens a lot. However, the understanding from the side of the municipality is starting to come.
Gasvrij Scheveningen	The presence of a shared vision differs per the theme. However, the municipality sees ownership only as property, while it is entirely different. They are still going to find that out.
Duttendel & Wittenburg	-
Bloemen- en bomenbuurt (BLOB)	The initiative states that some stakeholders are even making decisions against the citizens and that a shared vision is far out of the picture. The stakeholders have other interests and, therefore, another vision.
Rivierenbuurt/ Spuikwartier	The initiative is a bit gloomy. If you look at ten years ago, the awareness has increased enormously. The optimistic feeling is that we are already in the transition and other parties are also aware of this.

Table 17: The results per local energy initiative for shared vision (case 4, 5, 6, 7, 8 and 9).

Initiative	Social movement
Vogelwijk Energie(k)	The initiative states that it is undeniable a social movement. However, it is cautious because it does not want it to become a platform or talk on behalf of residents or citizens >> that is life-threatening >> it should not replace the dialogue between citizens and the government.
Buurt Energie Statenkwartier	The initiative states that they think what you do has only become possible because something social has taken place. More individualization and also technically more possibilities to facilitate participation. So definitely a social movement. This Energy Transition has become a theme in our lives.

Table 18: The results per local energy initiative for social movement (case 1 and 2).

Initiative	Social movement
Statenwarmte	The initiative states that it sees the initiatives emerge more due to the vacuum of the government's lack of vision. It is one big road to frustration. The old collectives are going to merge. The citizen initiatives are great, but it depends on the citizen who puts the time into it.
Stichting Hernieuwbare Warmte Ypenburg	-
Duursaam Benoordenhout	-
Gasvrij Scheveningen	The initiative states, "I think so, but I hope so too!" It should not be about the CO2 problem, but do it because it feels good. "I think you should ask the right question." It must be very much about how to frame the ET. It is framed too much as a problem. It needs to be presented in a more positive and promising way.
Duttendel & Wittenburg	The initiative states not for their neighborhood. It is not that everyone is together. They are all separate houses. We are thinking of a bubble model in which people with the same homes are linked together and help each other.
Bloemen- en bomenbuurt (BLOB)	The initiative states that it can be called a social movement in some cases.
Rivierenbuurt/ Spuikwartier	One could call it a social movement, but it is minimal. Not everyone feels equally well represented in this movement.

Table 19: The results per local energy initiative for social movement (case 3, 4, 5, 6, 7, 8 and 9).

Initiative	Other challenges
Vogelwijk Energie(k)	Reaching people is difficult, communicating better and that sort of thing, and a start-up project around the heat transition, for example, getting ten houses connected to the heat pump. They could also do something more collectively for sustainably generated heat.
Buurt Energie Statenkwartier	The involvement of more people and dealing with resistance from the citizens. Furthermore, to organize oneself so that one gets a voice at the table with the municipality, Eneco and Stedin. The municipality is interested if you have enough supporters. However, you have to have something to offer for commercial companies. If they cannot organize themselves properly, they cannot organize the demand to work with companies.
Statenwarmte	To stay enthusiastic as people who are actively involved.
Stichting Hernieuwbare Warmte Ypenburg	VVE's are difficult to reach and the woco's, but this is impossible through the municipality, and communication staff may need to focus more on that. The biggest challenge is to win the trust of the citizens. They eventually have to say yes to something. The initiative now has to work on that.
Duursaam Benoordenhout	Incredibly so hard to get through government procedures... they are slowed down by it.
Gasvrij Scheveningen	There must be independent and stop using the neighborhood association. They want to maintain the network without drowning in the foundation. They do not want to be part of the problem. They want to maintain their organic network to get everything moving.
Duttendel & Wittenburg	To maintain the initiative, to carry it on, to find successors. They have been trying to find an extra person for a long time. If they can physically do things again after the COVID-19, more young people can join in, which is more accessible. However, they are looking forward to that with care. They have to rejuvenate! However, those people have not been poked yet. They are busy with their work or something...

Table 20: The results per local energy initiative for other challenges (case 1, 2, 3, 4, 5, 6 and 7).

Initiative	Other challenges
Bloemen- en bomenbuurt (BLOB)	They are called by the project leader, with all kinds of evenings to discuss. Citizen participation is used to reach citizens, but in a rather thankless way that civil servants often do not even realize. Forward posts should be engaged in performing, paneling, and insulating. Citizen participation/initiatives must become active for awareness, information, and a more precise division of roles. Citizen groups/initiatives are also very active in implementing/solar panels of the policy >> they are tackling it because it is not being done.
Rivierenbuurt/ Spuikwartier	That hassle in the neighborhood association is a huge obstacle. The initiative should be created with a clean slate, etc.

Table 21: The results per local energy initiative for other challenges (case 8 and 9).

Initiative	The institutional influence on the initiative
Vogelwijk Energie(k)	The initiative states that the most significant barriers are ego motives. Citizens do not want to pay more than they currently pay for their energy and think it is too expensive. Alternatively, citizens think I will already be gone by the time we need to change the energy system, so I will not change at all. However, also, there are not enough installation companies developed yet. So, there is a lack of capacity. The initiative can say to people to isolate. However, if there is a waiting list at such companies, nothing will happen either way.
Buurt Energie Statenkwartier	The initiative states that the system choice will win that has the lowest societal costs. The current energy companies want to be part of the future system and profit. However, the municipality should make it possible for the citizens always to have the right to challenge solutions.
Statenwarmte	The initiative states that since a whole system needs to be changed, the investment costs are high. These costs are too high for a neighborhood to cover. Furthermore, the energy system is an extensive network. Therefore some subjects are on a higher level than just neighborhood level.
Stichting Hernieuwbare Warmte Ypenburg	The initiative states that people are primarily interested in the future energy system regarding price, safety, comfort, and reliability. The citizens do not want to give up on the standard level of the current system. Furthermore, the connection between neighborhoods and municipalities is also important. A lot is still managed on higher levels, so for the province or the whole country. Therefore, these levels also need to be included in the plans.

Table 22: The results per local energy initiative for the institutional influence on the initiative (case 1, 2, 3 and 4).

Initiative	The institutional influence on the initiative
Duursaam Benoordenhout	The initiative state that the municipality currently has a bad image and that there is a lack of trust among the citizens. This is not encouraging for the Energy Transition.
Gasvrij Scheveningen	The initiative states that citizens feel threatened by the Energy Transition. The current energy system is still working, and the citizens do not feel the urgency to change. Therefore, a new system is not attractive at all.
Duttendel & Wittenburg	The initiative states that the current political system is not designed to tackle a long-term problem that covers multiple coalitions.
Bloemen- en bomenbuurt (BLOB)	The initiative is afraid that if the same large energy companies lead the future energy system as the current system, it will only become more expensive. The current companies want to make a profit in the future the same as they do now.
Rivierenbuurt/ Spuikwartier	The initiative states that the large energy companies want to have a say in the future system and that they will leave no space for amateurs like the initiatives. Furthermore, some companies like shell are still focused on high-temperature solutions as the current system instead of low-temperature solutions.

Table 23: The results per local energy initiative for the institutional influence on the initiative (case 5, 6, 7, 8 and 9).

Initiative	Influence of the initiative on the institutions
Vogelwijk Energie(k)	The initiative state that the national action around lowering the temperature of your home heat system to 60 degrees is started with local energy initiatives. So, the initiatives can influence the institutions. Furthermore, the initiative makes citizens an active part of the generation and distribution of clean energy. The initiative has three cooperatives, two solar energy and one wind energy. The initiatives are much better in the collective solar roofs than in municipalities or companies.
Buurt Energie Statenkwartier	The initiative increases the number of sustainable interventions in the neighborhood, increasing social cohesion. Citizens are speaking their minds and are interfering in the clean energy discussion. Furthermore, the initiative wants to become an active part of the energy generation, and distribution in the neighborhood or at least wants to have influence and the possibility to gain financially.

Table 24: The results per local energy initiative for the influence of the initiative on the institutions (case 1 and 2).

Initiative	Influence of the initiative on the institutions
Statenwarmte	The initiative states that it makes people aware of the Energy Transition and stimulates action. However, one initiative does not have an enormous impact on the Energy Transition, but the initiatives together could have. Furthermore, they want to make the citizen's perspective more critical in the discussion.
Stichting Hernieuwbare Warmte Ypenburg	The initiative is actively working on increasing the involvement of the citizens and their perspectives. Furthermore, they want to become part of the solutions and work together with other stakeholders to generate and distribute clean energy in the neighborhood.
Duursaam Benoordenhout	The initiative wants to help the municipality regain the trust of the citizens and become some kind of glue. Furthermore, they want to look for possibilities for cooperatives and in this way give citizens an active place in the energy system.
Gasvrij Scheveningen	The initiative wants to empower people to become an active part of the Energy Transition and the future energy system. Furthermore, they want to change the status quo by creating a more robust neighborhood network. This network can provide each other with knowledge and help each other.
Duttendel & Wittenburg	The initiative provides a more local method besides the municipal and national trigger. The initiative wants citizens to help each other and actively think about the (future) energy system.
Bloemen- en bomenbuurt (BLOB)	The initiative states that it creates a more important spot for the citizens in discussing future energy solutions in the neighborhood. The citizen perspective gains more attention. The initiative strives for the best solution and not directly the easiest one.
Rivierenbuurt/ Spuikwartier	The initiative is gaining more attention for the social side of the Energy Transition and less wealthy people. Furthermore, they want to include the way people live and their lifestyles. In this way, they change the energy system and think about people's health.

Table 25: The results per local energy initiative for the influence of the initiative on the institutions (case 3, 4, 5, 6, 7, 8 and 9).

Initiative	Changing the energy system
Vogelwijk Energie(k)	The initiative is changing the system by creating multiple collective energy generation and distribution methods. A lower temperature in the heating system of houses is also something the initiative is working on.
Buurt Energie Statenkwartier	The initiative is changing the system by making people aware of the amount of energy they use and how to decrease this. Furthermore, they focus a lot on generating clean energy by solar panels and help people buy and install these.
Statenwarmte	The initiative is working on solutions to change the heating system in the neighborhood to a clean energy heat system.
Stichting Hernieuwbare Warmte Ypenburg	The initiative is changing the energy system by thinking about clean energy sources in the neighborhood. They want to make citizens active in the choice of solution. Also, heat and ventilation systems need to be optimized in the future.
Duursaam Benoordenhout	The initiative's primary focus is to let citizens generate and distribute clean energy via solar panels. This can be done individually but also collectively.
Gasvrij Scheveningen	The initiative mainly changes the energy system by creating an extensive citizen network. Via this network, people can help each other within the Energy Transition and how interventions should be done. Furthermore, they focus on a lower temperature for the heat systems in houses.
Duttendel & Wittenburg	The initiative mainly focuses on isolation and solar panels because of all the old houses in the neighborhood. Therefore, the initiative mainly focuses on energy preservation when changing the system and the generation of clean solar energy.
Bloemen- en bomenbuurt (BLOB)	The initiative focuses on energy preservation and clean energy generation via solar panels.
Rivierenbuurt/ Spuikwartier	The initiative focuses mainly on energy preservation. It wants to change the energy system by making people more aware of how they use energy, how much they use energy, and how they can decrease their energy usage.

Table 26: The results per local energy initiative for changing the energy system.

Initiative	Societal impact
Vogelwijk Energie(k)	They deliberately make the initiative very small. The neighborhood association is already tackling other things. However, they combine things around mobility, parking, electric charging, car sharing.
Buurt Energie Statenkwartier	The initiative only thinks about transport/mobility and maybe some greenery. However, the policy now is only concerned with insulation, solar panels, heat pump, heat transition.
Statenwarmte	They see those things separately. It would be best if you did not make it too complex. It would be best to connect loneliness or the like to the initiative. That is for another group.
Stichting Hernieuwbare Warmte Ypenburg	The initiative is connection sustainable interventions with the health level of people's living environment.
Duursaam Benoordenhout	The initiative is focusing on the Energy Transition only.
Gasvrij Scheveningen	The initiative already crosses neighborhood and municipal boundaries and tries to 'enhance' citizens' empowerment. Preferably the whole of the Netherlands and beyond. Furthermore, everything can be connected to the initiative. Ultimately, it is also about giving people the opportunity to solve things together and work on their living environment.
Duttendel & Wittenburg	The initiative connects the Energy Transition with the mobility issue and aging >> luckily, there seems to be some rejuvenation wave. They are still bothered that many large houses are used as office buildings (they do not like that).
Bloemen- en bomenbuurt (BLOB)	The initiative does not know exactly what should be around here, not even an aging population, those who die, and then new families come in.... the municipality created the first problem by putting down homeless people. An association has even been set up against the municipality because the homeless are there...
Rivierenbuurt/ Spuikwartier	The initiative wants to help with social ideas about lifestyle, breakfast at school for children >> citizen initiatives then have a caring task about how a neighborhood is doing.

Table 27: The results per local energy initiative for societal impact.

Initiative	Satisfaction about the municipality
Vogelwijk Energie(k)	The initiative finds that the municipality is very impressive from the point of view of the civil service. There is much grumbling about the municipality because it has all been made slow and complex, but everyone is searching. It is, therefore, effortless to grumble. However, the scaling up that the municipality has done in terms of workforce and commitment is excellent. The maturity of the decision-making and the fact that there have been discussions with all kinds of initiatives for ten years is excellent. There is an initiative budget from which all kinds of things are paid.
Buurt Energie Statenkwartier	-
Statenwarmte	The initiative states that it wants to make a difference between civil servants and the political people. The officials are such positive, excellent, and competent people. They know very well what and how they want to do.
Stichting Hernieuwbare Warmte Ypenburg	The initiative states that the municipality complies with its agreements, is open and constructive. They are generally less skilled, but they want to catch up.
Duursaam Benoordenhout	The municipality provide the initiatives with money, support and all kinds of resources.
Gasvrij Scheveningen	-
Duttendel & Wittenburg	The initiative states that the civil servants are pretty busy. They notice that there is often a lack of capacity and rather a lack of knowledge, but they have updated that well. It seems to be a little less. So, now mainly capacity problems.
Bloemen- en bomenbuurt (BLOB)	-
Rivierenbuurt/ Spuikwartier	Enthusiastic civil servants are encountered, but in general more encountered than support.

Table 28: The results per local energy initiative for satisfaction about the municipality.

Initiative	Dissatisfaction with the municipality
Vogelwijk Energie(k)	The initiative states that they currently have a very cautious board member and a council with a fragmented political landscape. That is where the delay comes in today: the political level. However, it does not detract from the fact that the Municipality of The Hague is doing well for the initiative.
Buurt Energie Statenkwartier	The initiative states that the municipality is very stubborn, but politically and administratively is different. It seems that the board is blowing with all the winds, does not stick to things such as 2030, which has been re-released, which is not very clear.
Statenwarmte	The initiative states that politicians are taking it too easy by putting a too elastic dot on the horizon. They gave the impression that anything was possible, and it was not. No clear preference was expressed, and as a result, there was no focus. You have so many wrong impressions and expectations. People started to participate very much, but then it was impossible, and they preferred to do it another way.
Stichting Hernieuwbare Warmte Ypenburg	The initiative states that the municipality is not yet moving forward with vision development and a strategy. In that respect, it is going very slowly, and they are not looking for connections with the residents. They are only allowed to give output about the system when it is already there. The interaction is not there. Furthermore, not all civil servants have the same motivation, knowledge, and time to do things.
Duursaam Benoordenhout	The municipality is not listening to the initiatives and does not care for all they do. The municipality is just going its own way. This is frustrating for the initiative. However, their understanding is coming slowly.
Gasvrij Scheveningen	The intuitive states that it has been two years, and they have not learned anything from them yet. The municipality indicates that they should rely on them, but why should they. Just do what you have to do. Say what you are doing transparently. Then they will make the decision themselves. Then the initiative makes agreements, and they just stick to them. They speak to Marco Zeeman once a year, and they have to trust him immediately. "Trust is important towards partners and relations, but I have no relationship with Marco." The municipality also focuses way too much on informing, and then you can leave a comment. That is not true. The municipality wants to use the citizens' initiatives for support. However, that is not the intention. That is not what they are here for.
Duttendel & Wittenburg	The initiative states that there were times when the civil servants were very difficult to reach, and action was tough to realize. The civil servants promise something, and nothing happens, which is annoying and demotivating.

Table 29: The results per local energy initiative for dissatisfaction with the municipality (case 1, 2, 3, 4, 5, 6 and 7).

Initiative	Dissatisfaction with the municipality
Bloemen- en bomenbuurt (BLOB)	Sometimes it goes very slowly, and then the initiative is disappointed. The municipality creates the most significant difficulties on the road with all the permits. The procedures are lengthy, and there are occasional errors. Everything about software is wrong about insulating and monumental buildings... and if you have mistakenly with filling in, they are very friendly. However, you have to start over and have no idea how. Councilors can also work against each other. Sometimes there is participation for the sake of participation. Moreover, they create complicated policies with complex rules, while people want to do something and want to change (demotivating). Furthermore, there are also many talk clubs, but few isolation clubs... Everyone is trained to talk and awareness, but not for action and taking action.
Rivierenbuurt/ Spuikwartier	The initiative states that it is unclear what life is about for the government >> you are an instrument to make and organize everything a little better. The civil servants appropriate this for themselves. The initiative is concerned about how the government is not communicating how the energy transition should be done. Because of this, there is total insecurity among people. The initiative does not have a good idea of what the government is currently actively working on. The municipality has a terrible image and a bad policy supporting neighborhood initiatives. They find it challenging to deal with participation. Something fundamental has to change. It is a must but not fully supported. There is a big gap between civil servants and citizens. Enthusiastic civil servants are encountered, but in general more encountered than support. The language is woolly and unclear. Everything takes too long. Many things are not tailor-made.

Table 30: The results per local energy initiative for dissatisfaction with the municipality (case 8 and 9).

Initiative	The relationship between the municipality and the initiative
Vogelwijk Energie(k)	The initiative states that it can not be representative. Therefore, the municipality still needs to take the lead and organize participation trajectories in neighborhoods. These trajectories can lead to decisions and an execution plan. The initiative needs the municipality to provide more clearance around citizen participation and the plans on the neighborhood level. According to the initiative, the municipality sometimes uses the initiatives for the wrong reasons or roles (representativeness or leading role).
Buurt Energie Statenkwartier	The relationship is inconsistent. You have civil servants, and there you also have all kinds of groups: one is much more open to the input of neighborhood initiatives, and the other is more businesslike about it. This also differs in their conviction whether they think that initiatives should have input yes or no.

Table 31: The results per local energy initiative for the relationship between the municipality and the initiative (case 1 and 2).

Initiative	The relationship between the municipality and the initiative
Statenwarmte	The initiative states that the municipality uses them as an excuse when things go wrong. Therefore, the initiative feels abused. Furthermore, the municipality is not listening to the citizens, which is wrong. Also, the municipality provides no clearance or frame in which can be participated…
Stichting Hernieuwbare Warmte Ypenburg	The initiative states that consultation is no participation. There is a lack of actual participation. In that way, the municipality has thought up everything in the end. Currently, the municipality does not provide a clear vision and no clear frame for initiatives.
Duursaam Benoordenhout	The initiative state that municipality is missing a chance. They could reach the citizens via the local energy initiatives, but they do not do this. Furthermore, everything done by the initiative is ignored by the municipality.
Gasvrij Scheveningen	There is no defined relationship. According to the initiative, the municipality wants the initiative to trust them, but it sees no reason for this. Furthermore, nothing is clear. It is all vague. The participation is not thought through. The initiative thinks that creating a participation manual without involving the citizens cannot be an excellent developed document. The focus on citizen participation is not enough at the moment.
Duttendel & Wittenburg	The relationship is inconsistent and sometimes really slow. When things take a long time, it is demotivating for the initiative. Furthermore, the initiative is working together with three other neighborhoods to become more interesting for the municipality to collaborate with. Another thing is that the municipality is making even more complicated rules for using some subsidies.
Bloemen- en bomenbuurt (BLOB)	The initiative does not always like the attitude of the municipality. The participation is often just to participate or are introduced too late in the project/situation.
Rivierenbuurt/ Spuikwartier	The initiative states that the relationship is undefined. There should be one civil servant responsible for the neighborhood, who is involved, knows what is going on, and somebody who can help.

Table 32: The results per local energy initiative for the relationship between the municipality and the initiative (case 3, 4, 5, 6, 7, 8 and 9).

6.3 RESULTS OF CROSS-CASE ANALYSIS

The results are presented using the research elements of Chapter 5. For the results of this section a cross-case analysis is done. The results of the nine cases are compared, combined and translated to the results presented in the following sections. The sections contain quotes of the semi-structured interviews with the initiative to strengthen the results. Each quote includes the referring interview number.

6.3.1 New ways of doing

The initiatives are innovating in new ways of doing. They are providing citizens with knowledge about the Energy Transition. Often this knowledge is specified for the neighborhood. So, the knowledge is especially useful and focused on the type of houses and people in the specific neighborhood. This makes the information more valuable than the general information provided by the municipality. Sometimes this gaining of knowledge helps citizens to become experts. Citizens are interested and schooling themselves or the following education to become an energy coach. When they have become experts, they can help and support other citizens in their neighborhood. Further, the knowledge makes them less dependent on other stakeholders in the Energy Transition. The citizens are more able to think and choose for themselves in this way. Besides this knowledge, initiatives create a chance for citizens to interfere with the Energy Transition. Citizens can form an opinion, and initiatives provide them a chance to have a voice. They do this, for example, by functioning as a middleman between citizens and stakeholders like Stedin, Eneco, or the municipality of The Hague.

Another new way of doing this is the use of collective business models. In some cases, the initiatives and citizens own a way of renewable energy production. This is, for example, a large roof in the neighborhood full of solar panels or a wind turbine owned and financed by citizens. Also, regarding heat transition solutions, initiatives are working on plans for the future. They think about ways to make the neighborhood natural gas-free and keep this new system in the hands of the citizens or give the citizens a significant role in the system. For example, in Ypenburg, the initiative is working on creating a geothermal source, and they are getting a subsidy from the European Commission to execute this plan.

6.3.2 new ways of organizing

The initiatives are innovating in new ways of organizing. They create a network of citizens within the neighborhood and often also among three of four neighborhoods together. These collaborations are helpful because some neighborhoods look a bit like each other regarding housing type and citizens. Further, it is also helpful to create more mass in the municipality's perspective, and therefore they are often taken more seriously by the municipality as well.

Another interesting thing is that some initiatives create their critical mass. They ask a group of citizens to provide them with critical feedback on the actions and decisions of the initiative. In this way, they create their reflection mechanism.

6.3.3 New ways of framing

The municipality of The Hague and other governmental parties often look at the Energy Transition from a technical perspective. They see it as a technical problem and, therefore, primarily think about solutions technically. The initiatives look at the Energy Transition from a more social perspective. They look at the situation in the frame of people's living environment,

people's homes. What is changing in people's living environment, and what will this mean for people's lives and lifestyles? These different perspectives do not always match, and therefore it could sometimes feel as if the municipality and the initiatives are speaking another language.

Another difference in perspective is the level or point of view they are using. Initiatives look at the Energy Transition from the point of view of their neighborhood. They know what is going on there and about the current mindset. This point of view has advantages, but also a disadvantage. They are very good at looking at more specific solutions suitable for their neighborhood, and they usually have much interesting knowledge. Furthermore, citizens get a more personal touch and are more eager to react and do something. One of the initiatives mentions: *'It is easier when you do it together with your neighbors than with the municipality.'* (#1)The downside is that they are less skilled in the total overview on the city or even province or national level. To include this perspective, they need other initiatives from other neighborhoods and, of course, the municipality with the city's point of view.

6.3.4 New ways of knowing

As mentioned earlier, the initiatives create and work with more neighborhood-specific knowledge. They use this knowledge to gain power and are less dependent on other stakeholders. They become interesting partners for the municipality or large energy companies like Stedin or Eneco by owning this knowledge. Therefore, they use the knowledge differently for the content and as an instrument in the stakeholder ecosystem.

Furthermore, the initiatives want everybody to have a basic knowledge about the Energy Transition. Only in that way can people speak about it, have an opinion, and be pro or against some ideas and solutions. The initiatives want to create a more transparent status quo around the Energy Transition so that citizens can play a role in the discussion.

6.3.5 COVID-19

In general, the COVID-19 crisis has slowed the process down for the initiatives. This was noticeable in as well the internal network as the external network. The other stakeholders and municipality were mainly busy with the pandemic. Also, the citizens had other things on their minds because of the pandemic. Besides, physical events and meetings were not possible anymore, making it a more significant challenge to reach people and motivate and activate people. *'The consultation hours and neighborhood consultations could no longer take place and that was a little less. But the neighborhood consultations via Zoom continued as usual. It was all just a little different. So it did have an impact.'* (#3) Lastly, some research done during the pandemic is unreliable since some were based on people's home situations. This home situation was often significantly changed because of the 'working from home' intervention. *'Research results do not always provide a good picture during this period and are therefore less useful.'* (#4)

6.3.6 Empowering people

When the initiatives provide the citizens with the knowledge and want to empower them, when people receive the right knowledge, they will know what they could and should do in their situation. Also, people want to be sure they do the right thing beforehand because regret is the nightmare of everybody. *'We want to make people aware that something is coming and that something needs to be done.'* (#7)

Therefore, the specific and trustworthy knowledge of the initiatives provides citizens with an action perspective. People should see first what they can do before they do it. Also, it helps when other people have done it before, and they can be used as examples to others.

Another way the initiatives empower the citizens is by giving them a voice. They want to help them speak their opinion and become part of the Energy Transition discussion. They do this because they think that citizens are critical in this energy system transition. They want them to benefit from the transition as much as possible. This is in line with the statements of the European Commission and VNG.

Finally, to empower people, everybody must be included. The initiatives do this by making the Energy Transition understandable, recognizable, and applicable for everybody. The municipality often brings information in a complex and woolly way. The initiatives try to translate this into something understandable for everybody in their neighborhood. It should be mentioned that this is a challenging assignment for them. *'The language is woolly and unclear.'* (#9)

6.3.7 Shared vision

The initiatives and their stakeholders share a common goal. This goal is to succeed in the Energy Transition and reach the sustainability goals of the National Climate Agreement and Paris Climate Agreement. Everybody wants to move in the right direction. Only the way to go that direction often differs, creating friction. One could state that the initiatives and their stakeholders, including the municipality share a common goal but do not share a vision. *'It depends on how you define vision. You have a shared goal. "You do not want to burn the earth down" How you deal with that can be very different. The vision is how you work this out, but that is where things sometimes clash.'* (#3) This has to do with all the different interests that play a role. Besides, the energy system landscape is also really scattered. Even among the larger energy companies, there is no shared vision. It looks more like chaos at the moment. *'There is no shared vision at all between the energy companies.'* (#1) Despite the common goal, there is no shared vision makes it complex and complicated to move forward together at this moment. However, it is also important to state that the awareness about the Energy Transition among stakeholders has improved a lot over the years. At least everybody recognizes the problem, the need to change, and is open for conversation. This is a great starting point to create a more shared vision.

Among the initiatives, there are also differences. This has to do with the different goals they set for themselves and their activities. There are different roles to fulfill, and each initiative has chosen for its own set of roles and, therefore, things to do and stand for. So, each initiative is unique in its way.

6.3.8 Social movement

In general, the initiatives have the feeling that they are part of a social movement. Some quotes of the initiatives:

'I think we are a social movement, but more I hope we are!' (#6)
'One could say that it is a social movement.' (#9)
'I think what we do only is possible if something social is happening.' (#2)
'I do not want to punch above our weight, but in some cases, it is a social movement.' (#8)

However, they also agree that the

impact of this movement is still small and could become more substantial. The social movement creation can be seen as a reaction. The initiatives are reacting to the lack of vision of the municipality according to the Energy transition in combination with growing individualism where people want to speak their own opinions. Further, they want to change the sphere around the Energy Transition from a more negative to a positive feeling for people. They want to make people see that there is also room for improvement and profit. According to the initiatives, it is all about asking the right question with the right framing.

6.3.9 Other challenges

The initiatives experience multiple challenges. Firstly, one of the hardest things is to reach as many people as possible. They have multiple ways, but they definitely could need some help communicating. This also has to do with gaining the citizens' trust in their neighborhood. In the end, an initiative is still a group of people, and some citizens need the weight of the municipality or other stakeholders to trust the initiative in what they do and their ideas. Secondly, initiatives are constantly working to keep the initiative alive. Since people involved in the initiatives are volunteers, keeping them going and enthusiastic is essential. To make sure of it, they need to see that they achieve results, impact, or gain other ways of positive feedback. Thirdly, to earn a spot at the table as an initiative to discuss the Energy Transition, it is, besides an extensive network, vital that you can represent in some way the opinion of the neighborhood. Further, this also has to do with professionality. They should be organized clearly and steadily. They should know how many people they can depend on for specific ideas, especially regarding citizen ownership of some part of the energy system. This professionality also includes knowing the Energy Transition to talk with other stakeholders. Fourthly, the initiatives often arise out of the neighborhood association as an interested group or a working group. The advantage is that they can use the network of the association, but the disadvantage is their dependency. It should work like this, that when things are not working out or on a low level for the association, this is not directly happening for the initiative.

6.3.10 Institutional influence on the initiatives

The current energy system is, for many people, a certainty. They do not need to worry about it, and everything is working fine. Therefore, the current situation is set as the standard. People do not want to lose out. They do not want to give back their comfort level, they do not want to pay a higher bill, and they also want it to be as safe and certain as it is currently. These thoughts set a high standard for the transition and the things the initiatives should consider.

The initiatives are thinking mainly about plans and ideas for the neighborhood and, therefore, on the neighborhood level. When they work together with other neighborhoods or the municipality too could also get involved with a more city-level perspective. However, the national and provincial levels also influence their plans and the possibilities. If the national plans are changing, this could affect the plans of the initiatives as well.

The commercial parties want to profit from the energy system as they do currently. As a result, they create situations where it becomes harder for citizens to interfere. The initiatives are afraid they

will end up in a monopoly energy system. It will be easy for the commercial party to increase the energy prices within this monopoly. Therefore, the citizens must become acknowledged players in the energy landscape. The initiatives also fight for always having the ability to 'challenge the status quo, and some of the plans of the large energy companies make it impossible for citizens to compete with their business models.

6.3.11 Influence of the initiatives on the institutions

Because of the initiatives, there is more attention for decentral generation of energy among citizens. The connection between the initiatives and the large energy companies is pushing these companies to think more about decentral generation. Besides decentral generation, citizen ownership is also gaining more attention. According to future energy systems, it becomes more mainstream to think about citizen ownership as a possible and feasible solution. For example, the initiatives state, *'current roles need to change; only large energy companies play a role at this moment, in the future more initiatives should play a more prominent role.'* (#2) They also foresee more collaboration between the large energy companies and the local energy initiatives to gain that local vibe.

Furthermore, by interfering with the future energy system and creating awareness about a decentral generation of energy, the citizens are claiming a more active role in the energy discussion. Citizens are earning their spot. By claiming this more active role, they can provide counterforce towards the political system. This counter force stimulated the integration of citizen participation in the Energy Transition. Besides counterforce, they also provide the municipality with an alternative and extra path to reach the citizens. The local energy initiative also results in a stronger getting multiple interests' perspective. The citizens' perspective should also be essential, not only the technical perspective. Since the municipality is there for the citizens, the initiatives force them to think about this perspective. The municipality needs to act in the interest of the citizens. This again is stimulating the integration of citizen participation.

6.3.12 Changing the energy system

As described above, citizens claim a more active role via the local energy initiatives. They do not only claim this active role in the discussion but also in the energy system itself. At this moment, the energy system is more of a service system. Because of all the changes, for example, a lower CV temperature could be the new status quo, the citizens want to be more in control over these changes. The future system will create a new experience of energy usage. In some cases, the citizens want to control the energy generation, source, delivery, and/or infrastructure. Multiple initiatives want to make it possible for the citizens to gain financially if this is possible in the new system.

6.3.13 Societal impact

When looking at a broader societal impact, it is seen that the local energy initiatives make a connection with other themes besides the Energy Transition. These other themes are mostly mobility, greening, and aging. In the end, they state that everything is connected, but this can make it more complicated as well. The opinions of the local energy initiatives about the involvement of other themes are divided. Some think that they have to deal with it because everything is connected. In contrast, others think that the tasks

about such themes are more meant for the neighborhood association or other citizen initiatives. Despite this last opinion, they do not deny a connection with these themes and the Energy Transition. The connection of the Energy Transition with these themes and the living environment and lifestyles, in general, make it even more impactful for society.

One thing which makes the local energy initiatives have a less societal impact is that they mainly arise in more prosperous neighborhoods. It is more accessible in such neighborhoods because people are not already struggling with paying their energy bills and are in a financially comfortable situation that allows them to think easier about sustainable interventions and investments. Sometimes, the local energy initiatives develop online tools. These tools are also available for other neighborhoods, making them also available for people who live less prosperous. The tools are in some cases even used outside the city of The Hague, in other places in The Netherlands.

6.3.14 Satisfaction about the municipality

In general, there are some positive feelings about the municipality. There is already a conversation about the Energy Transition with local energy initiatives for over ten years that is unique and unforgettable. The municipality improved its commitment, knowledge, and resources over the years. *'The civil servants are doing their best and are extremely positive and competent.'* (#2) It is getting better and better. Some initiatives can use a paid coordinator, who can provide certainty and continuity according to the municipal support. Furthermore, the energy preservation and isolation giveaway package is a good initiative. However, according to the local energy initiatives, not many people know about it.

6.3.15 Dissatisfaction with the municipality

Despite the generally positive feelings about the municipality, there is also dissatisfaction and disappointment. The processes of the municipality seem complicated for citizens according to the local energy initiatives. These procedures are slowing down the whole process. Also, the language is often hard to understand, unclear, and there is not enough space for customization. *'The municipality creates the most challenging things on the road with their licenses, procedures, and working software. If you fill it in wrong, they are very friendly, but you need to start over again, and they do not help you improve.'* (#8) Furthermore, there is a lack of clearance and transparency. The initiatives find that there is no clear vision of the municipality. They state that *'as long as this is vague, everybody is filling it in, on its own.'* (#2) A clear path creates an easier context to discuss. It is more valuable if the municipality tells the citizens and, therefore, the citizen initiatives, what they are doing and what their plans are. In this way, better and smoother collaborations can take place. At this moment, it is the opposite. One of the initiatives even states *'I worry about how the municipality is not communicating about how it should be done and go concerning the Energy Transition and the insecurity it creates among citizens'.* (#9) This lack of transparency often results in the late involvement of citizens in decision-making processes. The municipality seems to participate only to participate. If they already involve the citizens, this is too late in the process, and it is more getting informed than participating. One of the biggest dissatisfactions of the local energy initiatives is the misinterpretation of the municipality about the function and role of the initiatives. The municipality

wants to use the initiatives to represent a neighborhood or help them tick the box of participation for a neighborhood or project. However, the local energy initiatives do not want to be used. The initiatives want the support of the municipality and think this is important. However, they also state that there should be a strong focus on the citizen participation trajectories separately from the initiatives. *'The initiatives can provide support on the approach by providing knowledge on the neighborhood and by supporting the trajectories but cannot replace them.'* (#1) another dissatisfaction is about the lack of action. The initiatives think that the municipality is not progressing in its vision and strategy., *'It is going slow and there is not much interaction with citizens.'* (#4) They believe that too much money is going to awareness instead of action. In addition, they state that the municipality support, they will do something, but nothing happens. This is demotivating for the local energy initiatives. *'Too many talking groups and too few isolation groups within the municipality.'* (#8)

At last, it is important to mention that the local energy initiatives divide the civil servant side of the municipality and the political side. The initiatives are mostly dissatisfied with the political side. *'The political side is unclear, and let it seem that everything was possible while it was not. People were participating, and then they were disappointed'.* (#3) However, the civil servants are not interacting consequently with the initiatives. *'Some business-wise connection, others more familiar. Also, the size of voice the initiatives should have differs per person.'* (#2) *'The municipality needs to ask themselves what they think good participation and enough participation are. What are the requirements?'* (#4) Furthermore, they think that the municipality is too little invested in the interest of the citizens and too much in the interest of the large energy companies. Also, Duurzaam Den Haag is only an extension of the municipality. *'Duurzaam Den Haag is just an extension of the municipality. It [Duurzaam Den Haag] does not do me any good'.* (#6)

6.3.16 The relationship between the municipality and the initiatives

At this moment, the initiatives have the feeling that the municipality does not know how to handle participation. There is a gap between the municipality and the citizens, which is not yet closed. As already said, if the municipality is involving citizens, it is often too late. *'The only let citizens participate when the system has already been built or thought over.'* (#4) *'Like a steamroller they [the municipality] make a plan and execute it, this is often without consultation and accountability with the initiatives'* (#5) The dialogue between neighborhood citizens and the municipality needs more attention and time. *'You [the municipality] should not impose anything on neighborhoods. It should also come from the neighborhood'*. (#9) The initiative feels used as an instrument to make things better and that the civil servants are in charge of using them as instruments. Sometimes the initiatives even feel abused. *'We [the initiatives] are used as a cover-up by the municipality [if things go wrong], it is not that they think let us listen to what the citizens think, and I do not mean that cynically that is a fact.'* (#3) Also, the initiatives want other roles than the municipality is giving them in the first place. *'As an initiative, the municipality calls you to come to all kinds of evening meetings/ events to talk and discuss. But initiatives can be active in awareness creation, informing and are also active in the execution of policies. The role division is not clear.'* (#8) *'there is not much trust, initiatives can play*

an important role in regaining trust' (#5) The municipality should take the lead according to the initiatives. The municipality is the one to provide the citizens with a point on the horizon. This includes a clear strategic plan on the neighborhood level. If these plans are available, the citizens and initiatives can work together. The support from the municipality towards the local energy initiatives is not clear and not consequent. There is a need for a fixed point of contact within the municipality for each initiative. The initiatives have much knowledge which could help the municipality. The initiatives have the feeling that the municipality forgets this. They all work towards the same goal, so a smoother collaboration is necessary and works in everybody's favor.

6.4 FROM FOUR WAYS OF INNOVATION TOWARDS THE DIFFERENT ROLES AND POSITIONS

The results show that the local energy initiatives innovate in four ways: new ways of doing, organizing, framing, and knowing. All the different functions and activities result in the fact that the initiatives fulfill multiple roles and positions. When clustering all the different ways of innovating, the ways to empower people, and the interactions with the municipality, five themes can be highlighted. These five themes lead to five different roles and positions for the local energy initiatives.

The first and second themes are mainly about knowledge. For the first theme, the initiatives want to provide the citizens with essential knowledge and know the Energy Transition. Therefore, this first team is about awareness and creates the first role, 'Awareness creation'. The second theme is about the knowledge that allows citizens to do something. This knowledge is about the sustainable interventions they could do for their particular houses. In some cases, the initiatives help them how to do this or make deals to buy materials collectively. Therefore, the second theme is about action perspective and creates the second role, 'Action perspective creation'.

The third theme is about the connection with the municipality. The local energy initiatives want to be the glue between the municipality and the citizens. The third theme is, therefore, about promotion and advice. The initiatives promote the activities and campaigns of the municipality and advise the municipality about the neighborhoods and their characteristics. The third theme creates the third role, 'Advise and promote'.

The fourth and fifth themes are focused on empowering people. The local energy initiatives are working on a more active role for the citizens. The fourth theme is creating a more active role in the Energy Transition discussion. Therefore, the fourth theme creates the fourth role, 'Voice at the table'. The initiatives want to provide the citizens with a seat at the discussion table with other stakeholders like the municipality and the large energy companies. The fifth theme is creating a more active role in future energy systems. Therefore, the fifth theme creates the fifth role, 'Ownership'. Within this role, the initiatives want to enable the citizens to own a part of the future energy system which generates and/or distributes renewable energy in the neighborhood.

An elaborated discussion and explanation on the results within this chapter and, therefore, these five roles is presented in Chapter 7. This next chapter also contains a conclusion of the research question of the second phase of this research. Therefore, that chapter provides answers to which role and position the local energy initiatives have and what the potential of their contribution to the Energy Transition is.

7. DISCUSSION AND CONCLUSION

7.1 DISCUSSION

7.1.1 Major findings

The results indicate that not all initiatives are the same and do the same activities. The activities depend on the goals and ambitions of the initiative. Therefore, there are different roles and positions the initiatives can fulfill. Out of the case studies, it comes forward that the initiatives innovate in all four ways, namely new ways of doing, framing, knowing and organizing. The innovations and activities can be divided into five different categories. Therefore, out of the results five roles and positions are identified.

In the first place, the initiatives want to create awareness about the Energy Transition among the citizens in their neighborhood. They provide them with information in many different ways. When doing this, they frame the Energy Transition in the perspective of peoples' living environment and lifestyles to make it more understandable and appealing. This is something the municipality is not doing yet or enough according to the initiatives.

Secondly, the initiatives want to empower people to be able to choose and do for themselves. The initiatives do this by providing the citizens with specific knowledge about sustainable interventions they can do themselves, how they could do this, and sometimes a network to get it done. The initiatives are creating an action perspective for the citizens in their neighborhood. Action perspective is the ability to undertake action yourself. In general, the COVID-19 crisis was slowing things down for the initiatives. The physical events are beneficial. Also, providing advice at home for tailor-made sustainable interventions was a lot harder, and not everybody felt comfortable with this anymore.

Thirdly, the local energy initiatives try to be the glue between the municipality and the citizens. They do this by translating the general information about the Energy Transition of the municipality to more specific and understandable information for the citizens in their neighborhood. The initiatives also state that they have much knowledge about the neighborhood, which could help the municipality. They say that the municipality must take the advice of the initiatives.

Fourthly, the initiatives provide citizens with knowledge about the Energy Transition to make them less dependent and give them a voice. They want to give the citizens more power and a more active role in the Energy Transition discussion. The initiatives make connections with large energy companies and other stakeholders in favor of the citizens. Therefore, the initiatives are gaining attention for the citizen perspective and citizen participation in the Energy Transition.

Fivetly and lastly, the initiatives experiment with and use collective business models to generate and distribute renewable energy (electricity and heat). They want to change the energy system. In this way, not only the role of citizens in the discussion about the Energy Transition gets more active but also their role in the energy system itself. This experimentation with the execution of the energy generation, source, distribution, and infrastructure are new ways of citizen ownership.

As mentioned earlier, not all initiatives are the same. Each initiative fulfills its own set of these five roles and in its own way.

Overall, the local energy initiatives are connectors. They connect citizens within neighborhoods and among neighborhoods. They make a strong connection with the municipality and often with the province as well. Many initiatives are in contact with small to medium companies and with large energy companies. However, the network of the initiatives is also not for all the same, and some networks still need some development.

Empowerment is an important part of the contribution of the local energy initiatives to the Energy Transition. The empowerment of the citizens in their neighborhoods is what it is all about for the initiatives. At the moment, the citizens cannot make the right choices for themselves about the Energy Transition. The initiatives want to empower them and make them able to make these choices in three ways. In the first place, they want to make the citizens aware of the Energy Transition. They want to make them aware of what is happening, what may happen, and what this means for the citizens. Secondly, the initiatives want to provide the citizens with knowledge. With this knowledge, the citizens can talk about the Energy Transition with other stakeholders and know what they can do for their situation and home. The citizens can make plans for their Energy Transition. Thirdly, the initiatives want to gain power for the citizens. They fight for a voice at the table in the Energy Transition discussion. They do this by connecting with the municipality and large energy companies. They want to make clear that the citizens' interest is vital. Another way to gain power for the citizens is by getting ownership over a part of the future energy system.

When looking at the contribution of the local energy initiatives in The Hague in the Transformative Change perspective, it can be seen that according to the network relations, the momentum is not yet reached. The initiatives, municipality, and other stakeholders have the same goal but not the same vision. This makes the network disjoined. The stakeholders do not work optimally together to reach the goal. This makes it complex and chaotic. However, something is happening. The initiatives think that they are part of a social movement. They want to be a social movement and make themselves heard. The municipality knows about their existence, and the conversation with the municipality and other stakeholders is already going on. The social movement is still small, but the ambition is there. If a shared vision among the initiatives and stakeholders is created, there is more chance to reach the potential. The initiatives see the social movement also as a reaction to the lack of vision of the municipality. Therefore, one could think that the chaos in the stakeholder ecosystem was one of the elements needed to stimulate citizens to start local energy initiatives.

Besides the nonoptimal stakeholder network, the local energy initiatives face other challenges: reaching people in the neighborhood, keeping the initiative alive and going, getting organized professionally and being as representative as possible, causing the initiative to deserve a spot in the Energy Transition discussion. The last challenge is to become strong enough to be independent of the neighborhood association. It would be interesting to look at these challenges and see where the municipality could provide support to conquer these challenges.

Despite the challenges according to the network relations, it can be seen that there are also small things happening and

developing according to the relation to Institutional Change. There are multiple interactions between the local energy initiatives and the institutions. At the moment, the citizens are satisfied with the energy system. Therefore, it is hard to enthuse people about the Energy Transition. They want the same comfort, safety, reliability, and costs. In addition, the citizens do not feel the urgency yet. The large energy companies are already important players, but they think about their interests, namely profit and financial growth. The local energy initiatives motivate and activate citizens to become more active and claim a more active role in the system. The future energy system could involve another role for the citizens and, therefore, large energy companies. Because of the local energy initiative, citizen participation in the Energy Transition is stimulated and gains more attention. Citizens get a say in what will happen in their neighborhood. In addition, multiple initiatives want to make it possible for the citizens to gain financially if this is possible in the new system. The financial gain and active role of citizens are not typical in the current energy system. However, the Energy Transition is about system change, so the city level, province level, and country level will always influence the neighborhood level as well.

When looking at the relationship between the local energy initiatives in The Hague and the municipality, it is clear that this is nonoptimal. Four things make it nonoptimal. In the first place, the vision of the municipality about the Energy Transition is not clear according to the initiatives. Without this vision, there is no frame for the local energy initiatives and citizens to participate within. Secondly, besides the Energy Transition vision, there is no clearance about the municipality's vision about citizen participation. Therefore, the local energy initiatives and citizens do not know what role the municipality expects from them or allows them. They do not know where they stand and feel left out of the Energy Transition discussion and decision-making. Thirdly, the current support for and collaboration with the local energy initiatives provided by the municipality is inconsistent. The support differs per civil servant and initiative. The municipality does not seem to have a strategy according to this support and collaboration. Fourthly and lastly, the local energy initiatives feel misunderstood by the municipality. The initiatives want to fulfill different roles than the municipality sees for them. Furthermore, the initiatives feel abused sometimes by the municipality. In some cases, the civil servants use the local energy initiatives as their instruments regarding citizen participation. The municipality is misinterpreting the position of the initiatives. Therefore, both the municipalities and the initiatives do not know where they stand with each other. This is one of the surprising results, since there is a lot of contact between the municipality and the initiatives. It is odd that the initiatives still feel misinterpreted. This misinterpretation brings it back to the point that there is no shared vision. Overall, the interaction between the municipality and the local energy initiative needs a consistent strategy based on a municipal vision for the Energy Transition and a municipal vision for citizen participation.

7.1.2 Implications

The data contributes a clearer understanding of the activities and functions of the local energy initiatives. These activities and functions can be divided into five different roles. These five roles can be used as input by the

municipality to understand the initiatives better and improve their relationship with them.

Furthermore, the results give insights into the potential of the initiative's contribution to the Energy Transition and why this potential is not fully reached yet. Therefore, these results should be considered when considering how the strategy and action repertoire for the municipality needs to look. The local energy initiatives know quite some challenges where the municipality can be of help. However, the nonoptimal stakeholder network and the missing shared vision are fundamental reasons for the lack of momentum. These reasons are the starting point when creating the strategy.

7.1.3 Limitations

The content of the interview questions and the way the results were analyzed are influenced by the Transformative Social Innovation theory. This theory focuses on four relations and several elements. Therefore, this theory limits this research's total set-up and execution and the type of results possible. However, the choice for this theory is well-researched and well-argued (see Chapter 2). Furthermore, the results from this research are valuable and useful, as explained in the Implications section.

The reliability of this data is impacted by the focus on only one perspective, namely the perspective of the local energy initiatives. The civil servants and other stakeholders were not interviewed, and therefore, their perspective is not included in this research. Therefore, this research needs to be presented as insights into the local energy initiatives from their perspective.

The generalizability of the results is limited by the number of involved local energy initiatives. Not all the local energy initiatives in The Hague are covered. The research is only based on nine different initiatives. However, the cases differed as much as possible. Nevertheless, the insights give a general overview of the initiatives in The Hague. Other local energy initiatives could be analyzed in the same way and added to the research. It should also be said that only one person per initiative was interviewed. Therefore, it could be that the input for this case is somewhat one-sided. However, a part of the questions is answered objectively with facts, and the website of the initiatives was also used as input.

Furthermore, the roles were not yet presented to the initiatives and municipality and validated. Therefore, the identified initiatives' roles should be further developed with the initiatives and the municipality. This validation will be part of the third phase of this research and presented in the following chapters.

At last, the uniqueness of the local energy initiatives is a repeating subject. Therefore, the roles can be interesting and of use. However, it needs to be mentioned that these roles can only be seen as a starting point. The roles are still a way to standardize a phenomenon that calls for customization. One must be aware that two local energy initiatives that fulfill the second, third, and fourth roles can still differ. The initiative's goals, ambitions, context, and circumstances should always be considered because these create the differences between the initiatives.

7.2 CONCLUSION

This research aimed to identify the role and position of local energy initiatives in The Hague and the potential of their contribution to the Energy Transition. Hereto, the following research question

has been formulated:

What is the role and position of local energy initiatives contribution to the Energy Transition in The Hague and what is the potential of their contribution?

Based on a qualitative analysis of nine initiatives, it can be concluded that the local energy initiatives in The Hague are fulfilling five different roles and therefore five different positions and interactions within the Energy transition as shown in Figure 5. In addition, each of the roles stimulate the citizens to participate on a certain level of the ladder of citizen participation as shown in Figure 26.

The first role is about 'awareness creation'. The role is about giving the citizens information about the Energy Transition and their options. The role is mainly about the interaction between the initiative and the citizens to inform them. Furthermore, the first role is at the third level of citizen participation 'informing', which is moderate citizen participation

The second role regards 'action perspective creation' and is about giving the citizens information about the Energy Transition and their options. Furthermore, the role is about the interaction between the initiative and the citizens to inspire and activate them. The second role 'Action perspective' is also at the third level since it concerns providing the citizen with information, so moderate citizen participation.

The third role is 'advice and promotion'. The third role is about three different interactions. The initiative gains information about the citizens and uses this information to advise the municipality. In addition, the initiative can also provide advice for a participation trajectory. The interaction between the municipality and the initiative, and the initiative and the citizens can also work the other way around. This happens when the initiative is promoting activities from the municipality to the citizens. Furthermore, the third role 'Advice and promotion' is on the fourth or fifth level. Within this role the citizens can give their opinion via the citizen initiatives. If the citizens are granted a limited degree of influence in the process this role can climb to the fifth level. Therefore, this role is moderate citizen participation.

The fourth role is 'Voice at the table'.

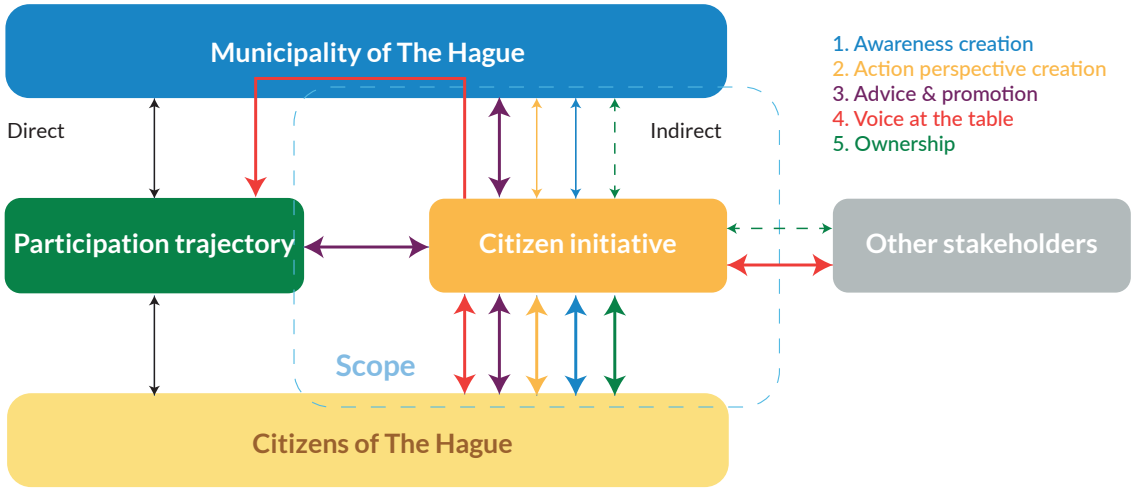


Figure 25: The interactions of the five roles of the local energy initiatives.

The fourth role is about three interactions. The initiative is gaining information about the neighborhood and opinion from the citizens and provides them with information about the Energy Transition and alternative solutions. The initiative joins the conversation and discussion about the Energy Transition and future energy system of the neighborhood with the municipality and the stakeholders. Because the initiative joins the discussion they can also function as an expert in a participation trajectory. Furthermore, the fourth role 'Voice at the table' is on the sixth level. Within this role the citizens are invited to the discussion via the citizen initiatives. They are able to negotiate or forward requests which at least will be partially fulfilled. In this way the citizens become part of the decision-making process. Therefore, the fourth role is high citizen participation.

The fifth role is 'Ownership'. The fifth role has one main interaction. This interaction is between the initiative and the citizens. Together they own a part of the new energy system. The municipality or other stakeholders can also become involved in the part. However, this is not necessary. Furthermore, the fifth role 'Ownership' is on the seventh or eighth level. The citizens gain at least part of the power of the new energy solution or system. When the citizens have all the power, citizen control occurs and the eighth level is reached. Therefore, the fifth role is high citizen participation.

For all the roles, there can be spoken of moderate or high citizen participation. This makes local energy initiatives promising and interesting to look at from a municipal perspective when they want to stimulate citizen participation in the Energy Transition.

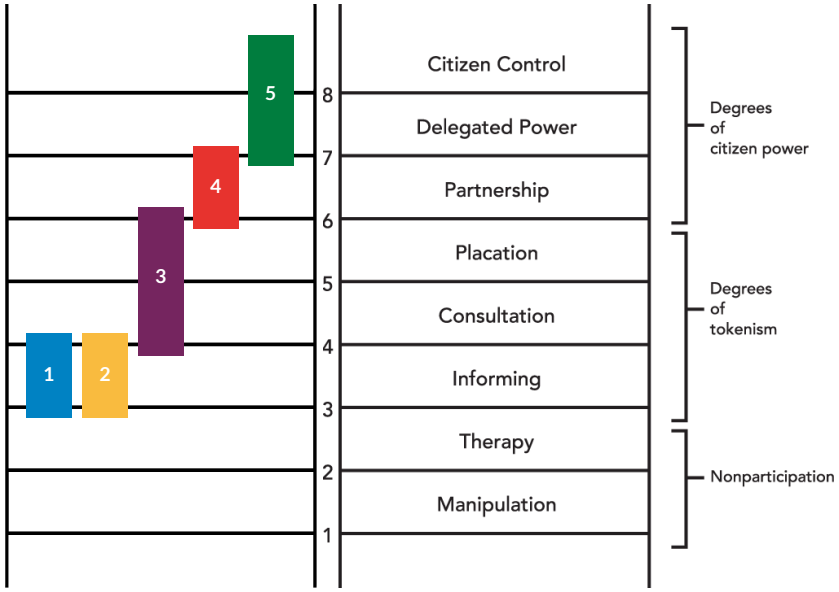


Figure 31: The five roles connected to the levels of citizen participation they stimulate.

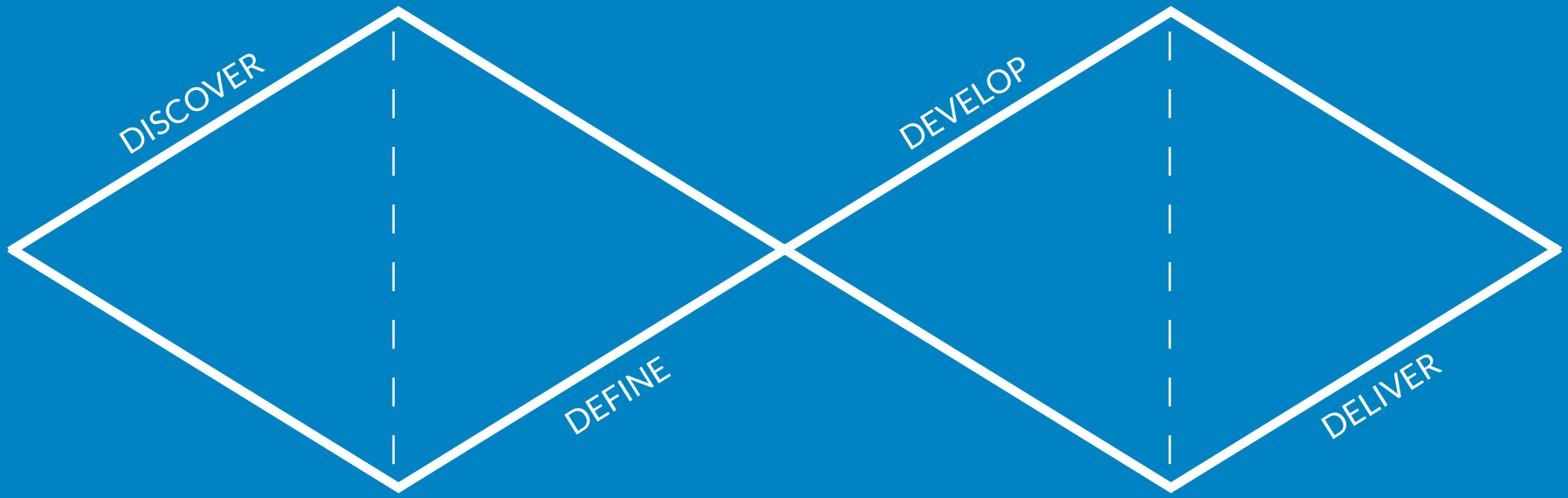
When looking at the potential of the contribution of the local energy initiatives, the potential of their contribution is already showing when looking at the interaction between the initiatives and institutions, the connection to Institutional Change. The new ways of doing, framing, knowing and organizing influence the current energy system and the initiatives also have the

ambition to change the system. Overall, the initiatives want to let the citizens have an active role in as well the discussion about the Energy Transition as in the future energy system itself.

However, it came forward that the full potential of the initiative's contribution to the Energy Transition is not achieved. There are multiple barriers towards the full potential. Firstly, the missing shared vision creates an nonoptimal stakeholder ecosystem. Without agreeing on the way to reach Energy Transition goals there is no optimal collaboration. Furthermore, the local energy initiatives are facing other challenges regarding their activities and functions. For example, it can be hard to reach people in the neighborhood. The municipality could be of help regarding the missing shared vision, nonoptimal stakeholder ecosystem and other challenges. However, the relationship with the municipality is a barrier itself. This relationship is undefined and inconsistent and the initiatives even feel misinterpreted by the municipality.

INTERMEZZO 2

The second intermezzo provides an introduction to the design process. The double diamond model is chosen as design process and will be further explained and why this specific model is chosen.



AFTER ZOOMING OUT AND IN, IT IS TIME FOR THE DESIGN PROCESS

Within the third phase, the focus lies on designing a process strategy and action repertoire for the participation team. This strategy will help the participation team scale citizen participation in the Energy Transition through the local energy initiatives.

The first phase of this research uncovered the complexity of the stakeholder ecosystem and the main issues. The complexity of the ecosystem makes it essential to include people in the design process of the third phase. Co-design seems a suitable addition to the design process to do this. After that, the second phase zoomed in on the local energy initiatives themselves. Overall, the initiatives have much potential, but also within this phase, issues came forward. It is impossible to look into all the different challenges in both the first and the second phases. Therefore, it is crucial in the third phase to look for the core challenge and design for the right problem. The Double Diamond approach is specifically equipped to include the search for this right problem within the design process and includes co-designing with people. Consequently, the Double Diamond approach is used to form the design process of the third phase of this research.

THE DOUBLE DIAMOND APPROACH

The Double Diamond approach includes two diamonds, as the name is telling. Each diamond is a process of divergent thinking and convergent thinking, as shown in Figure 26. Divergent thinking is about 'exploring an issue more widely and deeply,' and convergent thinking is about 'taking focused action' (IDEO, d.z.)

The two diamonds include four stages as shown in Figure 26. The first diamond includes the Discover and Define stage. The first stage Discover helps to understand the problem (IDEO, d.z.). One could say that there are interesting insights to take along from the first and second phases in the Discover stage. The first stage is presented in Chapter 8. Within the second stage, the insights gathered in the Discover stage will help define the challenge differently (IDEO, d.z.) At the end of the second stage and therefore the first diamond, the core

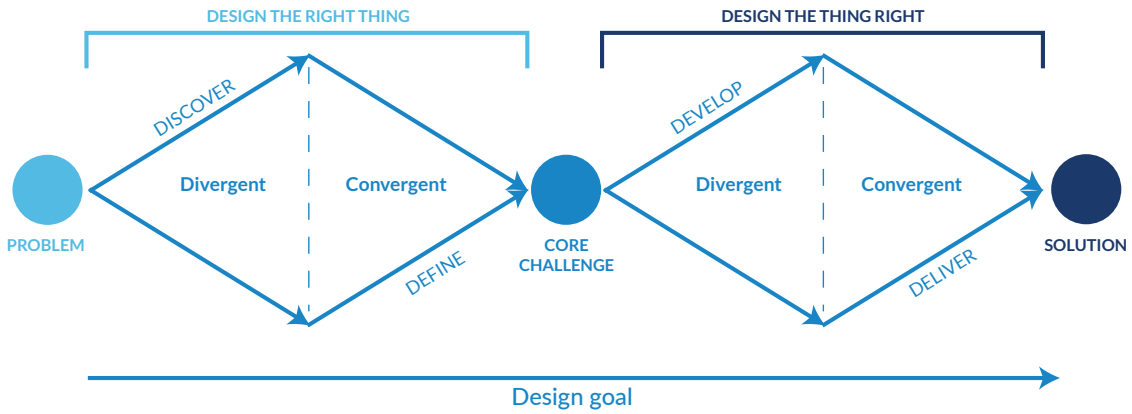


Figure 26: The four stages of the double diamond design process.

challenge as spoken about before can be defined. Chapter 9 contains the second stage.

After the core challenge is defined, the second diamond will lead into the Develop stage. The Develop stage encourages giving different answers to the core challenge and co-designing with people (IDEO, d.z.). The development stage is described in Chapter 10. Finally, the fourth stage Deliver involves testing the different solutions and ending up with one that works and is improved (IDEO, d.z.) The final concept is shown and explained in Chapter 11.

RESEARCH FOR DESIGN

The connection between the three phases works as Research for Design as shown in Figure 27. Whereby, the third phase is the design process existing out of the double diamond based on two sets of divergent and convergent thinking as described earlier. The first and second phases are the research. The first phase explores the context of the research and is seen as divergent thinking. The second phase focuses on the local energy initiatives and is seen as convergent thinking. Both phases result in useful insights valuable for the design process of the third phase. Therefore, research is used as input to come to the design process of the third phase. Thereafter, the design is used as the output of the third phase.

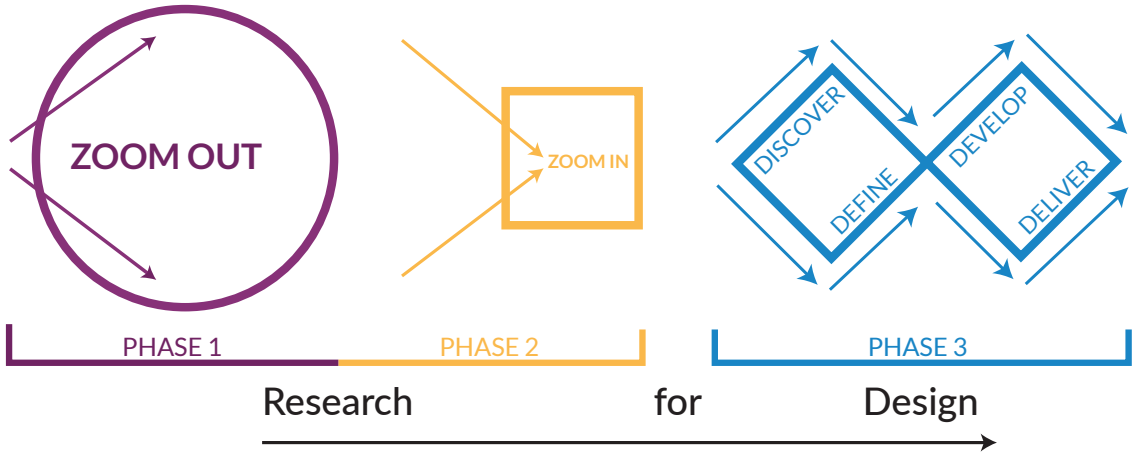
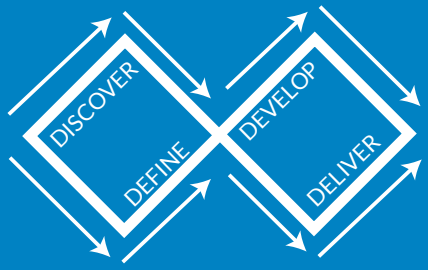


Figure 27: The connections between the three phases works as research for design.



PHASE 3

In the third phase, the design goal is achieved and the solution is presented. This is done by a double diamond design process, which includes four stages. Firstly, discovering the problem more widely and deeply. Secondly, defining the core challenge, which leads to a design vision. Thirdly, the development of multiple answers to the challenge. Lastly, the delivery of an improved solution.

8. RESEARCH INTO THE RELATIONSHIP BETWEEN THE LOCAL ENERGY INITIATIVES AND THE MUNICIPALITY

Currently, it is complicated and unclear for the participation team how to scale citizen participation through the local energy initiatives. The reason for this is that the relationship between the municipality and the initiatives is undefined and inconsistent. A clear process strategy and action repertoire can help the participation team develop a concrete relationship to scale citizen participation through the initiatives. However, before diving into the content of this process strategy and action repertoire, it is essential to discover the problem more widely and deeply. Only then is one able to define the right challenge for which to design.

From the first phase of this research, it became clear that the stakeholder ecosystem is highly complex. The local energy initiatives know multiple stakeholders in other civic organizations, companies involved with energy and sustainability, and multiple municipality teams. The multitude of municipal teams creates complexity for the participation team too. Therefore, besides providing a defined and consequent relationship, the process strategy and action repertoire need to align the different municipal teams. Looking more into the relationship between the municipality and the local energy initiatives, it depends on the different roles the initiatives fulfill and the support the municipality provides. The first phase uncovered issues concerning this relationship. In the first place, each initiative is unique. This uniqueness makes it impossible to attribute the same roles to every initiative and form one standardized way to treat the initiatives as the municipality. Secondly, the division of roles and responsibilities is still unclear. The second phase uncovered insights on these two issues by zooming in on the local energy initiatives. The insights resulted in five defined roles for the local energy initiatives, and it depends on each initiative which roles it is fulfilling. So, the five roles acknowledge that not all initiatives are the same.

Looking at the first dependency of the relationship, the five roles of the second phase can act as input. Only, the five roles are not validated with the local energy initiatives or the civil servants yet. Therefore, this chapter will provide additional confirmatory research into the five roles. When looking at the second dependency of the relationship, the municipal support, no information is gathered. Therefore, this chapter will provide additional exploratory research into municipal support for each of the five roles. The additional research concerns both the perspectives of the local energy initiatives and the civil servants because the civil servants and the initiatives are the most critical stakeholders. The civil servants include the participation team and the other teams of the Energy Transition program of the municipality since, as found out in the first phase, all teams need to be aligned by the process strategy and action repertoire.

8.1 RESEARCH FRAMEWORK

As mentioned, both the perspective of the civil servants and the perspective of the local energy initiatives are included in the additional research. The two perspectives can influence each other, and it is essential that both can speak as freely as possible. In order to make

this possible, the two perspectives are covered with two separate workshops. Each perspective looks into a validation of the initiatives' roles and an investigation of the municipal support. Since the roles are about the initiatives, it is most important to perform the workshop with the initiatives as participants. Furthermore, the initiatives could join a workshop for two hours and the civil servants only for one hour. During the workshop with the initiatives, it was possible to go into more detail. The more detailed insights of the first workshop could be used as input for the second workshop. This more detailed input made it possible to validate the roles in less time with the civil servants. So, the initiatives were involved in the first workshop and the civil servants in the second.

During the role validation in the first workshop, the local energy initiatives are asked to provide insights using four categories to gain more specific information and as a reference frame for the type of answers. The four categories are the goal, the tasks, the bottlenecks, and the opportunities for each role. During the exploration of the municipal support per role, something similar was done. Again categories were used to gain more specific information and as a reference frame for answers. The following categories were applied to specify the municipal support:

- Skills: *Which abilities and knowledge does the municipality need to have?* - The skills include what the involved civil servants need to know, understand and be able to. This also has to do with what is possible to do.
- Resources: *What does the municipality need to offer the initiatives?* - The resources include what the initiative needs from the municipality to fulfill their role or make it easier to fulfill their role.
- Tasks: *What does the municipality need to do/execute?* - The tasks include what is expected from the municipality to do, what they need to undertake, and their responsibility.
- Capacity: *With what intensity needs the municipality to be involved?* - The capacity includes the level of involvement of the municipality, how much time and effort the initiative needs from them.

An example of each of the categories is as follows:

- Skill: The municipality needs to have knowledge of and contact with interesting stakeholders for the initiative.
- Resources: The municipality offers its network as a resource.
- Tasks: The municipality organizes and facilitates a meeting between the stakeholders and the initiative.
- Capacity: One-time meeting to create the connection between the stakeholders and the initiative. Suppose essential and interesting the municipality could also get involved in monthly meetings.

Because of the busy agendas, the civil servant workshop only lasted one hour. Therefore, the level of detail is not the same. The different categories were not applied to validate the initiatives' roles and investigate the municipal support during the second workshop. However, the second workshop also focused on how the civil servants experience providing municipal support to the roles. Insights in their experience could give clearance on how to prioritize municipal support. The experience is divided into the following four categories:

- Importance: How important do the civil servants think it is to support the role?
- Municipal responsibility: How much do the civil servants think it is the municipality's responsibility to support the role?
- Complexity: How hard do the civil servants think it is to support the role?
- Time-consuming: How much time do the civil servants think it will cost to support the role?

An overview of the research framework, including the two perspectives and the used categories, is presented in Figure 28. The figure shows that the insights of the two perspectives are brought together at the end. This synthesis is explained in the following section, methodology.

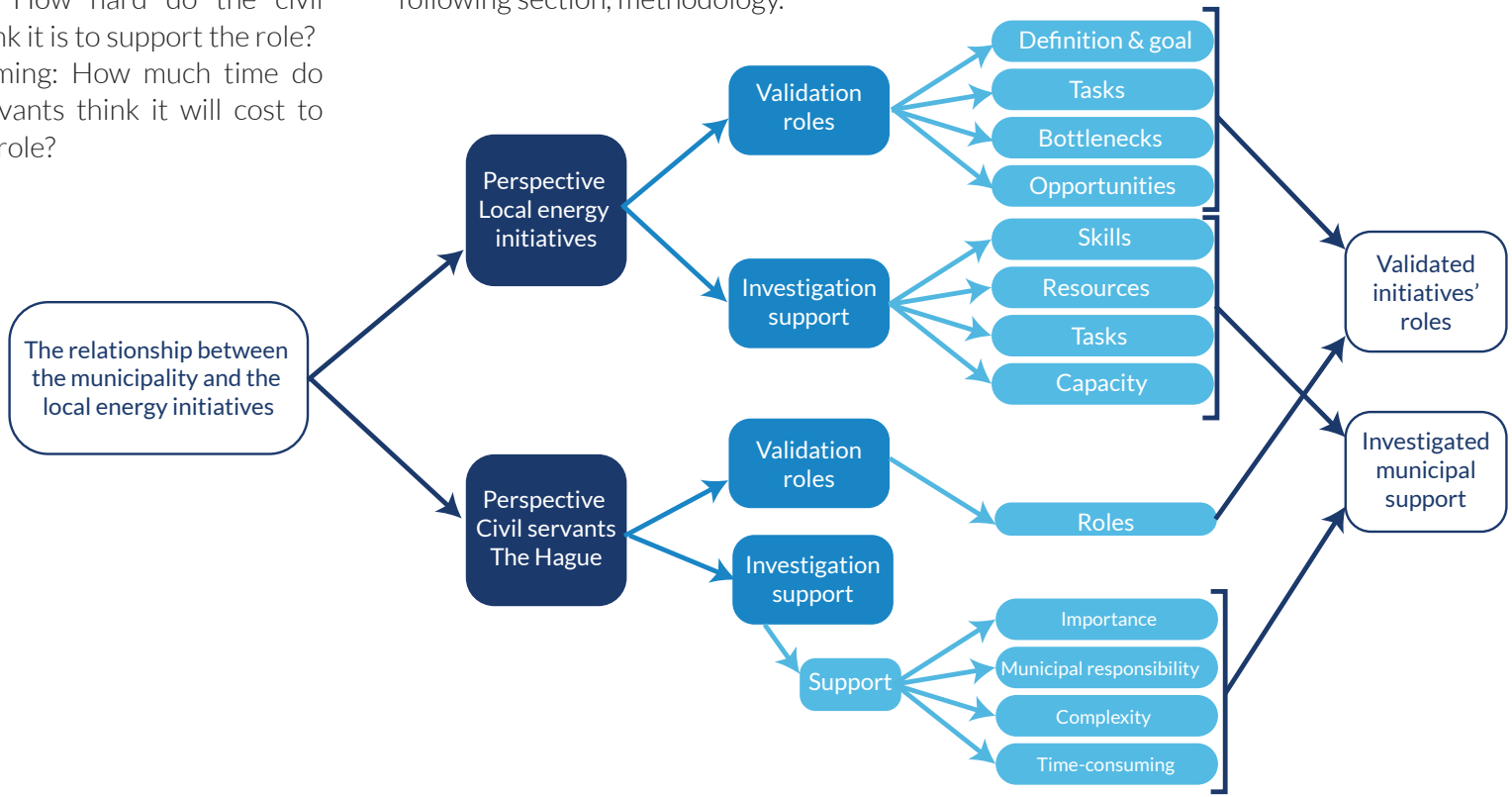


Figure 28: An overview of the research framework for the discover stage based on two perspectives and resulting in validated roles and insights in the municipal support.

8.2 METHODOLOGY

Within this section, the methodology for the two workshops and the synthesis are explained. Further, the script of the first workshop can be found in Appendix 8 and the script of the second workshop in Appendix 9.

8.2.1 Workshop I: The perspective of the local energy initiatives

The first workshop looks into the perspective of the local energy initiatives. An overview of the involved local energy initiatives is shown in Table 33. As described earlier, this workshop includes confirmatory research and exploratory research. The goal of the workshop is also twofold. In the first part of the workshop, the goal is to map out the various activities and functions of citizens' initiatives in the energy transition in The Hague. The second part of the workshop aims to express expectations about the desired support from the municipality of The Hague. In total, there were six different initiatives invited to join the workshop. In the end, five initiatives joined because there was one last-minute unsubscribe. All the initiatives were familiar with the project and were interviewed during the second phase of this

Initiative	Short description
Buurt Energy Statenkwartier	Buurtenergie Statenkwartier (BES) is an association that stems from a private initiative of a number of residents of the Statenkwartier. Neighborhood energy Statenkwartier is committed to making the Statenkwartier more sustainable. By informing about and encouraging measures to reduce energy consumption and improve the indoor climate of homes. https://www.statenkwartier.net/bes/
Bloemen- en Bomenbuurt	The working group was set up during the theme evening on Sustainability and Energy Saving in January 2018. This working group wants to collect and share information with local residents so that our neighborhoods become less dependent on fossil fuels. https://bomenbuurtonline.nl
Duursaam Benoordenhout	Benoordenhout takes control itself and has written its own Wijk Warmte Visie. A Vision stating how Benoordenhout will switch from natural gas to sustainable heat in the future. We look at what is smart to do yourself, and what is more beneficial together.
Rivierenbuurt/ Spuikwartier	We focus on Energy Transition. Energy transition is the switch from natural gas and fossil power to other CO2 neutral and renewable energy sources. By establishing the Energy Point, we also hope to reach those people for whom it now feels too far away. https://www.brs-denhaag.nl
Stichting Hernieuwbare Warmte Ypenburg	The initiative is an independent foundation for and by residents of Ypenburg, who are committed to CO2-neutral district heating in 2025. Safe, reliable, the same comfort at the same cost. https://www.hernieuwbarewarmteypenburg.nl

Table 33: The involved local energy initiatives as participants of the first workshop.

research. The workshop took two hours.

Because of the COVID-19 crisis, the workshop was held in an online environment. MS Teams was used as a video call program, and a Miro board was set up as support during the meeting. Since the participants were not all digitally able to use the Miro board themselves, the facilitator handled the board. The workshop was recorded, so it was possible to watch back. So, the focus during the workshop was only on the participant and not on taking notes. The five initiatives were split up into two groups of 2 and 3. In this way, the participants got more speaking time, and therefore more data can be gathered. The other group of 2 initiatives was facilitated by Dawn Verkerk, a Service Designer of the municipality of The Hague. Before the workshop, she was updated on the current state of the project. In addition, a workshop script was provided to her, so the workshops in each group were identical.

The workshop included two assignments. The first assignment focused on validating the roles and gathering more specific data on the roles. First, an overall question was asked on the recognizability of the five roles and if these roles covered all the functions and activities of the local energy initiatives. After that, the assignment focused more in detail on the five roles. The participants needed to put themselves each time in another perspective, namely of one of the roles. To make the participants familiar with this 'perspective thinking,' a practice assignment was introduced, as shown in Figure 29. Within the practice assignment, the participants needed to empathize with the different roles of Anna. She is a mother, a writer as a profession, and an orchestra conductor as a hobby. For the first two roles, the two-by-two was already filled in. The quadrants of the last role were filled in together. The quadrants

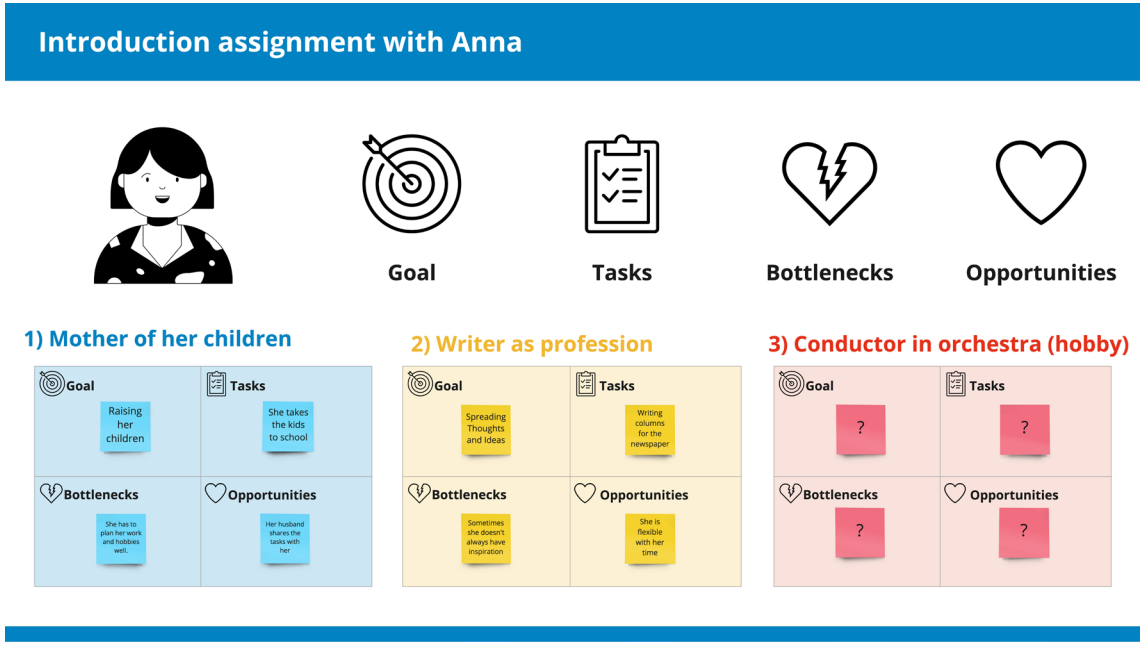


Figure 29: The introduction assignment to make the participants emphasize with different role perspectives.

represent the four categories as explained in Section 8.1 and shown in Figure 37. After the practice assignment, the participants were asked to fill the quadrants for each of the five roles. The participants got the instruction to fill the quadrant together through a discussion. The facilitator led this discussion and plotted post-its based on this discussion in the quadrants on the Miro board as shown in Figure 30.

The second assignment focused on gathering data about the preferred municipal support per role. Since the participants were already warmed up to emphasize with each role, a practice assignment was unnecessary. The assignment used the categories as explained in Section 8.1 and as shown in Figure 38. The participants were asked to fill the four support categories for each of the five roles with again the instruction to fill them together through a discussion. The facilitator led this discussion and plotted post-its based on this discussion in the categories on the Miro board, as shown in Figure 31.

At the end of the workshop, results were gathered for all categories of the research goals presented in the research framework.

Figure 30: The first assignment to validate and enrich the different roles.

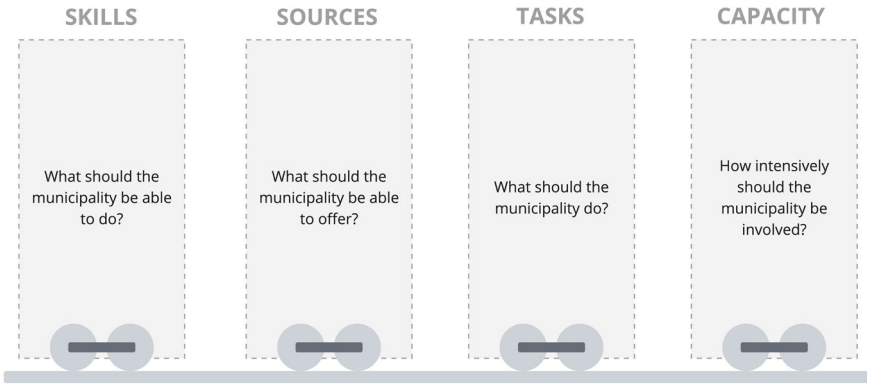


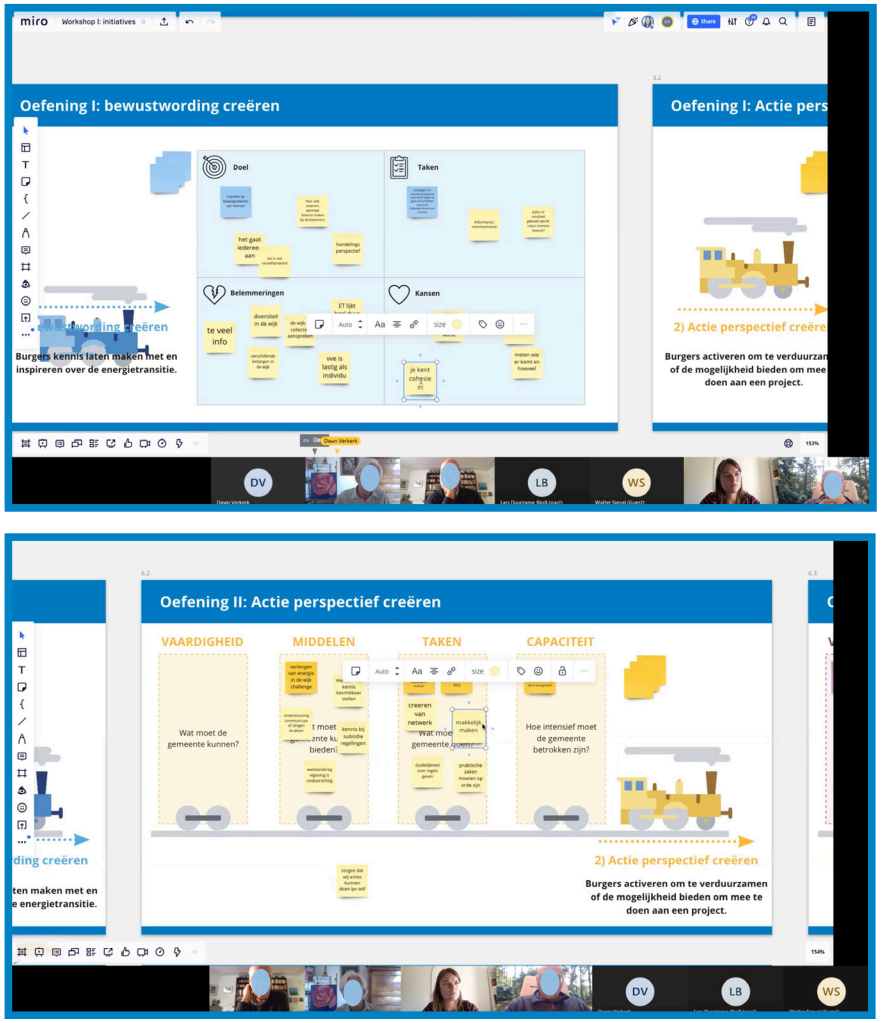
Figure 31: The second assignment to investigate municipal support.

IMPRESSION OF WORKSHOP I: THE PERSPECTIVE OF THE LOCAL ENERGY INITIATIVES

The train metaphor

During co-design workshops it can be a struggle when thinking of something new that does not exist yet. A solution to this struggle can be metaphors or so called Design Metaphors by providing them a language to think and talk about something they had no experience of (Albinsson & Forsgren, 2005).

Within the workshop with the initiatives there was chosen for a Design Methaphor concerning a train. The train is the initiative which brings the citizen to the Energy Transition. This train can have many different colors and each color represents another way/role to connect the citizens to the Energy Transition as shown in Figure 32. However, the train (initiative) needs all kinds of things to keep going. These needs can be fulfilled by loading the wagons of the train. These wagon will be loaded with the categories of municipal support as shown in Figure 33. In this way the relationship between the citizens, initiatives, municipality and Energy Transition became more clear for the participants of the workshop.



Figures 32 and 33: Impressions of workshop I.

8.2.2 Workshop II: The perspective of the civil servants

The second workshop is meant to gain insight from the municipal perspective. An overview of the civil servants who participated in the workshop are presented in Table 34. The same as with the first workshop, this workshop exists out of two parts. The first part is again confirmatory research to validate the different roles of the local energy initiative only now with the municipality perspective. Insights of the first workshop are already implemented. Therefore, the roles are slightly changed and more in-depth relative to the first workshop. The goal of this first part is to validate the different roles in the perspective of the civil servants. The second part involves exploratory research about the support of the municipality. The goal is to gain insights into the municipal support, and the civil servants are experiencing this support. A final question was asked about the help of an instrument for the municipality when providing the support.

There were eight civil servants invited to the workshop. Unfortunately, Esther Becker Hoff, one of the clients, was not able to attend the workshop. So, in the end, seven civil servants participated in the workshop. The civil servants are each part of one of the teams of the Energy Transition program. All the teams are represented, except the Execution team, which still does not exist yet. In contrast to the workshop with the local energy initiatives, the workshop with the civil servants lasted one hour. As explained earlier, there was no place in all the agendas to fit two hours.

Team of Energy Transition program	Person
Team Transformation/client	Nana Slof
Team Transformation	Michel van Ruyven
Team Preparation & planning	Harmen de Vrede
Team Strategy & policy	Arno van Heerde
Team Strategy & policy	Jaco Devilee
Team Preparation & planning	Boris Minkes
Team Strategy & policy	Marinus Stulp

Table 34: The civil servants who participated of the second workshop.

Because of the COVID-19 crisis, the workshop was held in an online environment. MS Teams was used as a video call program and the questions were asked in an interactive way via AhaSlides.com. During the workshop the participants were able to see the slides on their phones as well. When the questions were asked the participants could type the answer or choose the answer on their phones.

The first part of the workshop is only a small part of the workshop and includes a short discussion on validating the different roles of the initiatives. It is mainly important for civil servants to recognize the roles to provide insights into the municipal support for each role. The participants were provided with an overview of the different roles, including the changes and additions of the first workshop. The main questions for the discussion were if they recognized the roles, if they missed anything, and if

they understood the roles.

The second part of the workshop was about municipal support per role and how the civil servants experienced this. The civil servants were asked what the support of each role would include. They were instructed to write down their answers via Ahaslides.com on their phones. The experience of this support was asked based on scaling questions. The civil servants needed to scale the support for each of the four categories as presented in Section 8.1 on a scale from 1 to 10. It was possible to see the answers to the scaling questions directly on the screen, as, for example, shown in Figure 34. In this way, it was possible for the civil servants to react to each other's answers and potentially start a short discussion about the answers.

At the end of the workshop, results were gathered for all categories of the research goals presented in the research framework. In addition, the slides presented a final question to gain inspiration for the first step

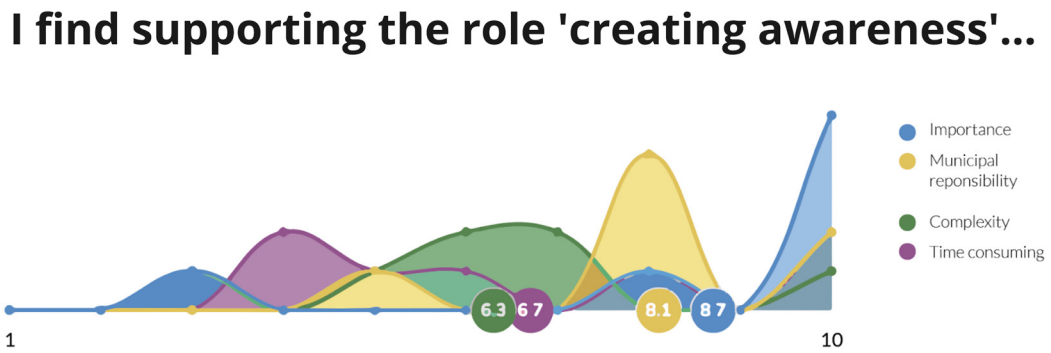
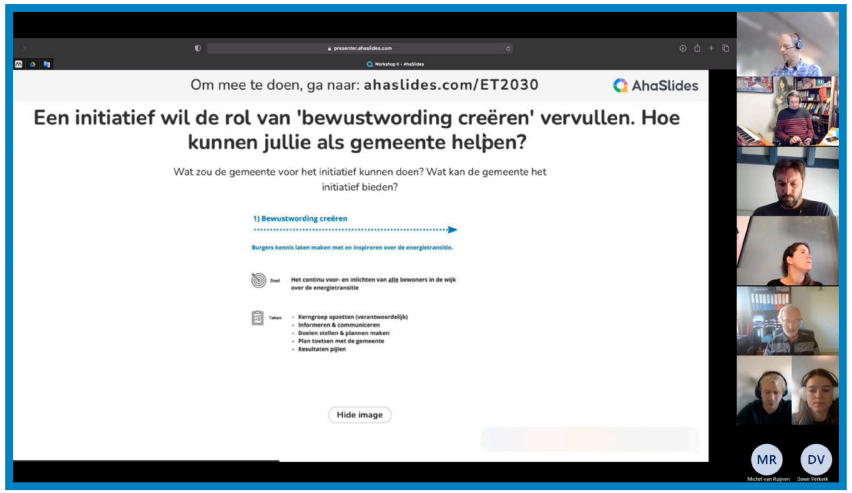


Figure 34: An example of the outcomes of the scaling questions per role. In this case of the first role.

IMPRESSION OF WORKSHOP II: THE PERSPECTIVE OF THE CIVIL SERVANTS



Figures 35, 36, 37, 38: Impressions of workshop II.

towards a design direction. The question was about what form an instrument could help the civil servants when supporting the local energy initiatives.

8.2.3 Synthese of both the workshops

As presented in Figure 39, the synthesis of both the workshops is about combining the results for each of the five roles represented by the five colors. The categories which were used as reference during the validation of the roles and the investigation of the support are used as a frame. The results of the first workshop already fit within the frame and the results of the second workshop are clustered using the frame. In this way the overlapping results of the second workshop are removed. The results of both the workshops can be combined and be used as the overall results. The results of the workshop can be found in Appendices 10 and 11.

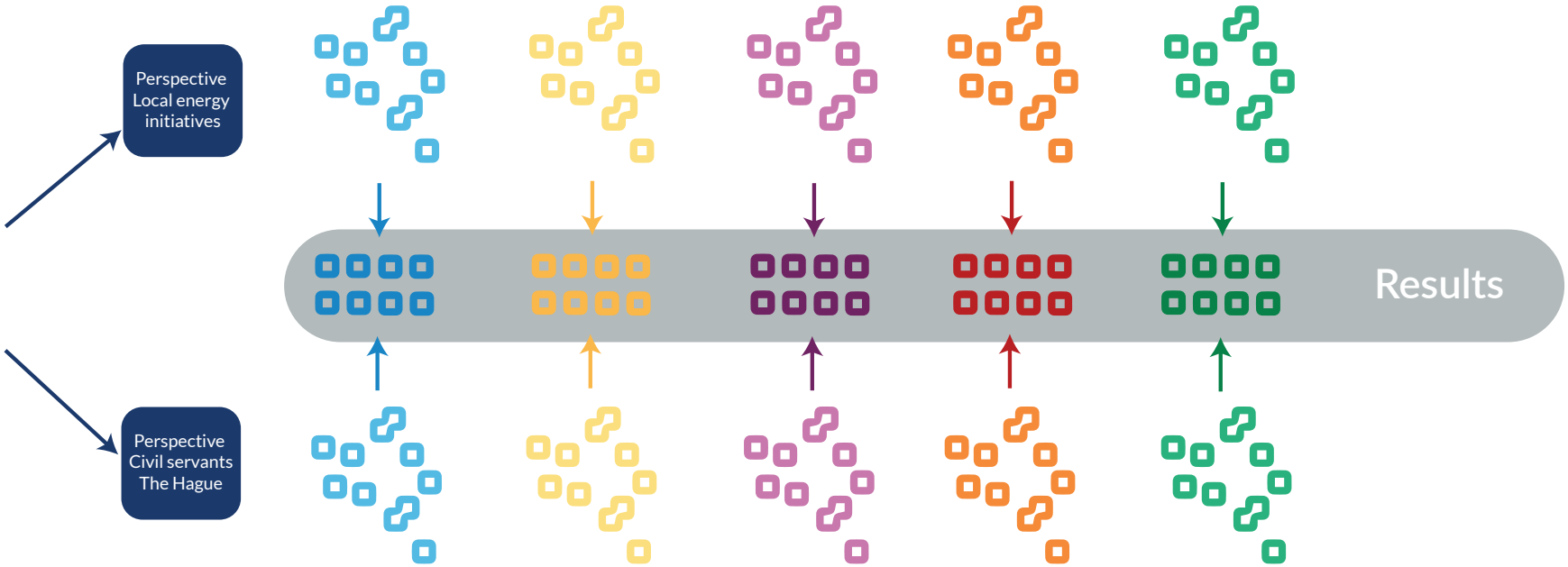


Figure 39: Synthesis of both the workshops into combined results per role (each color representing the matching role).

8.3 RESULTS OF THE WORKSHOPS

During both the workshops, the defined roles for the local energy initiative out of the second phase of this research were validated. Within the first workshop, all the roles were recognized. Only the roles' Advice and promotion' (role 3) and 'Ownership' (role 5) were not correct yet. Furthermore, a basic role was missing according to the initiatives. Within the second workshop, the defined roles were presented, including the changes in the third and fifth roles and the addition of a basic role. The basic role and the specific roles were recognized and understood by the civil servants. It only was pointed out that the stakeholder(s) towards which the local energy initiative is fulfilling the role is(/ are) not always the same. This answer was a reaction to an overview of the roles, as shown in Figure 40. The interactions were adjusted as shown in Figure 41. The specific interaction of each role can be found in that specific role overview. Further, the role overviews include all the categories of the research framework, a definition of the role based on the workshops, and the level of citizen participation, which the role is stimulating.

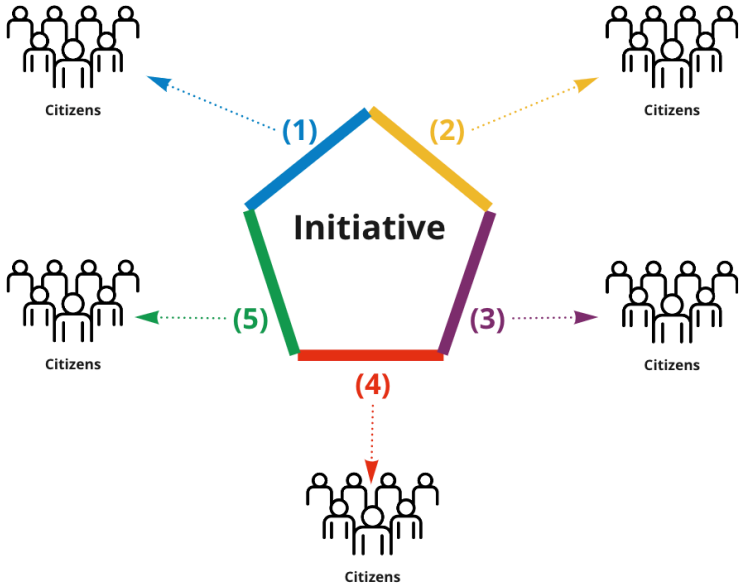


Figure 40: Overview of role interactions as shown in the workshop.

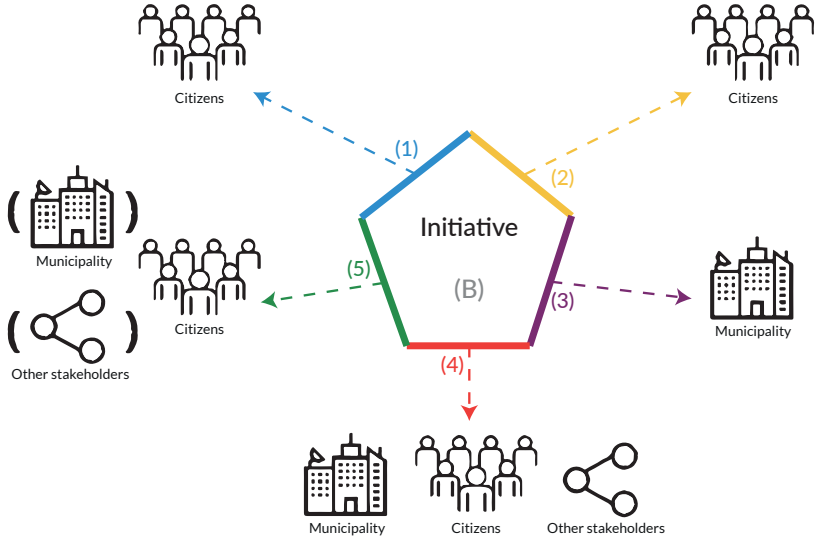


Figure 41: Renewed overview of role interactions after the workshop.

8.3.1 Role 3: Partnership with municipality

The third role was defined as 'Advice & promotion.' However, during the first workshop with the local energy initiatives, they had some comments on this. The initiatives were afraid that they would become some errand boy for the municipality. They did not like this idea. Therefore, they saw the third role more as a collaboration between the municipality and the initiatives. In this way, the role is more about helping each other and putting in the effort instead of only the initiative for the municipality. The new name of the third role is shown in Figure 42.

Figure 42: The renewed third role.

8.3.2 Role 5: Execution and ownership

The fifth role was defined as 'Ownership.' The local energy initiatives embraced this. However, they wanted to add something, namely 'Execution.' The initiatives stated that the role is about owning a part of the energy system and its execution. The new name of the fifth role is shown in Figure 43.

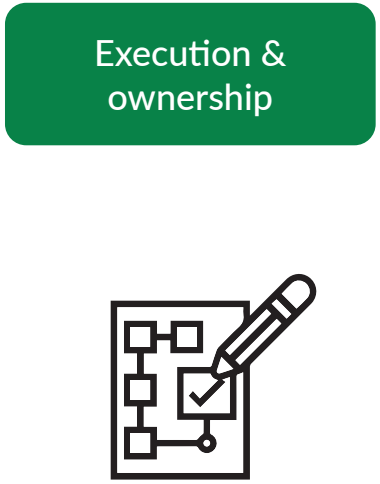


Figure 43: The renewed fifth role.

8.3.3 Basic role: Long term commitment

They missed a basic role when presenting the different roles to the local energy initiatives in the first workshop. This role has to do with the general beliefs and purpose of the initiatives. This role is the trigger where it all begins. Therefore, the basic role is fulfilled by every local energy initiative and forms the starting point for its purpose. The definition and goal can be found in Figure 44.

Figure 44: The addition of the basic role.

8.3.4 Overviews of the five roles

Figure 45: Role 1.

Role 1: Awareness creation

Definition:
Introducing citizens to and inspiring them about the Energy Transition.

Goal:
Continuously informing and educating all residents in the neighborhood about the Energy Transition

Interaction:
Within this role the main interaction is between the initiative and the citizens. The municipal support is to strengthen and encourage this interaction.

Tasks of the initiative to fulfill role
- Set up core group (responsible)
- Inform & communicate
- Set goals & make plans
- Test the plans with the municipality
- Gauging the results

Bottlenecks
- Diversity in the neighborhood (diverse interests) and speaking to the neighborhood as a collective.
- Subsidies are complicated.
- There are a lot of different departments within the municipality working on the Energy Transition and it seems that they work against each other, further they do not seem to come to decisions.

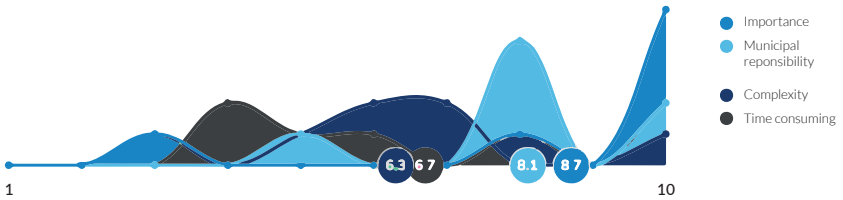
Opportunities
- The local newsletters are often well read.
- Create one place in the municipality where people can easily go to with all their questions about the Energy Transition, subsidies, permits etc.
- You can create social cohesion in the neighborhood by using the Energy Transition.
- The municipality can help with creating awareness. For example they could present their vision to the citizens.

Support of the municipality – Skills
- Knowledge of own rules
- Consensus between departments
- Clear & unambiguous Energy Transition goal(s)
- Insight into the composition of the neighborhood
- Examples of other neighborhoods

Support of the municipality – Resources
- Make locations available
- Platforms
- Communication material
- Subsidy for communication material and activities

Support of the municipality – Tasks
- Communicating how the municipality views the Energy Transition (per neighborhood): frame
- Help with approaching residents
- Make communication employee available
- Help with organizing activities

Support of the municipality – Capacity
- Periodic consultation (monthly/ quarterly)
- Consistent communications employee



Level of citizen participation
Creating awareness about the Energy Transition among citizens is about informing and inspiring them. When looking at the participation ladder, this role fulfills the third level, 'Informing'. Therefore, the level of citizen participation is moderate according to the simplified ladder of Quist (2007).

Figure 46: Role 2.

Role 2: Action perspective creation

Definition:
Activating citizens to become more sustainable or offering the opportunity to participate in a project.

Goal:
Make residents aware of the feasible interventions they can do themselves and motivate them to take action.

Interaction:
Within this role the main interaction is between the initiative and the citizens. The municipal support is to strengthen and encourage this interaction.

Tasks of the initiative to fulfill role
- Clarifying the benefits of sustainable intervention with simple, framed objectives (focused on the types of housing in the neighborhood)
- To enthuse
- Communicating success stories from fellow residents / sample homes
- The training and deployment of energy coaches
- Facilitation of (information) meetings (on location)

Bottlenecks
- There is no central point for local energy initiatives.
- Media with counter information /disbelievers.
- No location to use.
- The municipality or companies that compete with the activities of the initiatives.

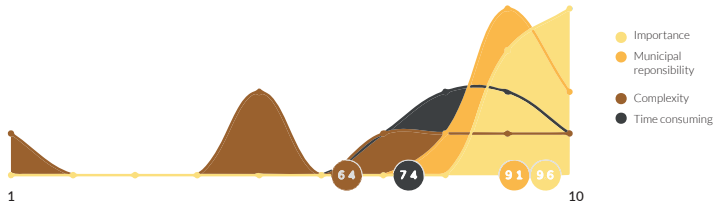
Opportunities
- The positive use of media.
- Collaboration with other initiatives.
- The more initiatives, the better. They create action in the Energy Transition.

Support of the municipality – Skills
- Concrete knowledge about the necessary Energy Transition measures
- Knowledge about permits and subsidies (complete!)
- Be able to think ahead, beyond current legislation

Support of the municipality – Resources
- Make people with knowledge available, if necessary. external experts
- Clear overview of subsidies
- Clear action perspective per type of resident (minor interventions)
- Training for energy coaches
- Network of companies
- Energy Saving Packages

Support of the municipality – Tasks
- Strengthen and set up network
- Energy in the Neighborhood Challenge
- Supporting projects (joint purchase of solar panels/insulation)
- Transparency of own plans
- Coherent policy to align initiatives

Support of the municipality – Capacity
- Be always available and otherwise indicate when you have time
- Quarterly/semi-yearly update from the municipality on the vision Energy Transition



Level of citizen participation
Creating an action perspective for the Energy Transition among citizens is about informing and motivating them. When looking at the participation ladder, this role fulfills the third level, 'Informing'. Therefore, the level of citizen participation is moderate according to the simplified ladder of Quist (2007).

Figure 47: Role 3.

Role 3: Partnership with the municipality

Definition:
Provide each other with (neighborhood-specific) information about projects and the Energy Transition to support and promote each other.

Goal:
Make the municipality aware of neighborhood-specific problems and collaborate fitting within the agenda of the neighborhood.

Interaction:
Within this role the main interaction is between the initiative and the municipality. The municipal support is about collaborating on activities, advicing each other and prompting each other's actions. The support is a partnership, which is there for the citizens of the neighborhood.

Tasks of the initiative to fulfill role
- Conversations with residents from the neighborhood, as mixed/inclusive as possible
- Continuous conversations with the municipality
- Create a strategic plan/advice report
- Organizing information evenings together

Bottlenecks
- The initiatives are not representative for the neighborhood.
- The initiatives do not want to be the errand boy of the municipality or an extension.

Opportunities
- This role is focused on collaboration.
- The initiatives know what is going on in the neighborhood and have valuable information.
- This collaboration is the start of the municipality looking at the initiatives as an interesting player and also needs to take its own active position in the field.

Support of the municipality – Skills
- Clear plans for the implementation of participation
- Willingness to get involved
- Being able to listen, being open
- Open-minded, dare to take new paths
- Internal integral coordination and cooperation

Support of the municipality – Resources
- Innovation fund for new technology
- Designated contact person per neighborhood (permanent)
- Making communication/participation resources available
- Employees who are actively collecting Energy Transition information/ knowledge

Support of the municipality – Tasks
- Take actions yourself for the 2030 target and communicate about this in a transparent manner
- Transparency of participation processes
- Let the initiative advise you
- Planning together / neighborhood agendas
- Leadership, visionary role
- Thinking along and counter thinking

Support of the municipality – Capacity
- Carry out several projects together every season
- Intensive contact with a contact person per initiative

Level of citizen participation
A partnership with the municipality considering the Energy Transition is about collaborating and advising. When looking at the participation ladder, this role fulfills at least the fourth level, 'Consultation' and possibly the fifth or sixth level, 'Placation' or 'Partnership'. The level depends on how much the municipality is accepting the advice of the local energy initiative and the impact of the opinion of the local energy initiative on the plans they make together. Therefore, the level of citizen participation is moderate to high according to the simplified ladder of Quist (2007).

Figure 48: Role 4.

Role 4: Voice at the table

Definition:
Take a voice at the table in discussions about future Energy Transition solutions in the neighborhood.

Goal:
Arguing and defending affordable and neighborhood-supported solutions for the Energy Transition.

Interaction:
Within this role there are multiple important interactions. In the first place the interaction between the initiative and the citizens. The initiative is gaining insights about the preferences and ideas of the neighborhood about the Energy Transition and possible future solutions for the new energy system. The second interaction is between the initiative and the municipality. This interaction is about the conversation about the Energy Transition and the possible future solutions for the new energy system and that the initiative gets a voice in this conversation. The third interaction is connected to the second interaction and is between the initiative and other stakeholders like large companies as Stedin and Eneco which also have a voice in the conversation. This interaction can be created by the initiative itself or facilitated by the municipality. The municipal support is about providing the initiative with the voice at the table and helping them with fulfilling this voice.

Tasks of the initiative to fulfill role
- Talking to all kinds of different stakeholders & making arguments
- Exploring and introducing alternatives
- Create and introduce list of criteria
- Create a shared vision and agree on criteria

Bottlenecks
- Some of the plans are already defined.
- Different interests, own agenda of large companies
- The initiatives are representative for the citizens in the neighborhood.
- Not clear how impactful the voice at the table is and which table the initiative is sitting on.
- To make a shared goal and vision.

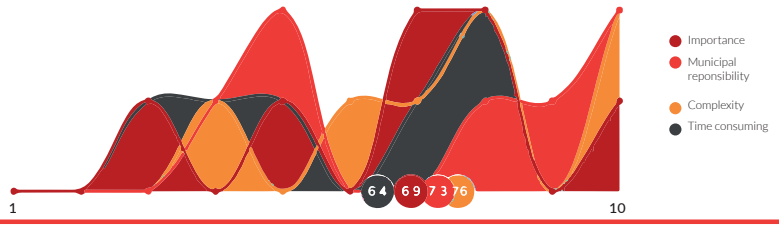
Opportunities
- A formal collaboration can move things forward and speed things up.
- The citizens can get a voice in what happens with their neighborhood energy system in the future.
- More space for alternative solutions at the table.
- Citizen perspective and therefore more chance for action and momentum to get neighborhood-support.

Support of the municipality – Skills
- Pure role, minimal conflict of interest
- Sharing knowledge, not a closed club
- Willing to change things, listening ear
- Being able to put people in their power

Support of the municipality – Resources
- Frameworks in which can be participated in decision making and required knowledge
- Subsidies for studies and advisors or direct expertise
- Guidance and resources for approaching the neighborhood/getting an opinion

Support of the municipality – Tasks
- Municipality is the main decision maker
- Creating vision together
- Involve initiatives (and citizens) in all phases
- Neighborhood-support check and facilitate meetings with residents
- Help do research
- Keep everyone in the municipality up to date

Support of the municipality – Capacity
- During the definition phase often
- Involve regularly and clearly indicate expectations each time



Level of citizen participation
A voice at the table in the discussion about the Energy Transition is about having a say in what will happen in the future and therefore being part of the decision-making. When looking at the participation ladder, this role fulfills the sixth level, 'Partnership'. Therefore, the level of citizen participation is high according to the simplified ladder of Quist (2007).

Figure 49: Role 5.

Role 5: Execution and ownership

Definition:
The implementation and ownership by the citizens of parts of the energy system (generation, distribution, infrastructure).

Goal:
Creating decision-making power and knowledge resulting in affordable systems and a way to capitalize on financial opportunities.

Interaction:
Within this role the main interaction is between the initiative and the citizens. The initiative wants to create something together with the citizens and for the citizens. However, responsibility can be shared with the municipality of other stakeholders like Stedin or Eneco. The municipal support is in the first place focused on helping the initiative and the citizens. If the municipality would share in the responsibility, the support can also change into collaboration.

Tasks of the initiative to fulfill role
- Researching different options
- Realizing capacity & supply/demand
- Setting up & guiding projects
- Setting up a cooperative (possibly with shared ownership with other stakeholders/municipality)

Bottlenecks
- To achieve this role, knowledge and experience are a must. Also, trust is needed that this knowledge and experience is enough.
- Current energy system and regulations make it hard.

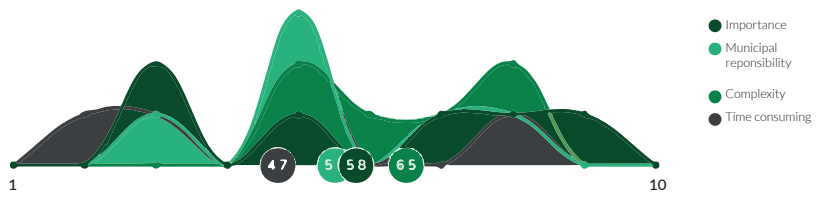
Opportunities
- Citizens could profit from the Energy Transition in this way.
- Positive impact on sustainability goals of the city.
- Reaching higher levels of citizen participation.
- If a success, the project/corporation could be scaled or replicated to other neighborhoods.

Support of the municipality – Skills
- Thinking from a neighborhood level and cross-neighborhood/city level
- Granting the trust of the municipality when a promising solution through initiative
- Possibly co-ownership
- Overview of the total playing field

Support of the municipality – Resources
- Frameworks in which to participate
- Information and the way through bureaucracy
- Network of companies
- Subsidies, permits incl. assistance
- Knowledge and expertise

Support of the municipality – Tasks
- Control over the whole/city level
- Making room for initiatives in tenders
- Linking initiatives to energy companies
- Participate/join if interested (co-ownership)
- View and assess plans, take care of quality
- Local Ownership Policy
- Keeping an overview on a fair playing field

Support of the municipality – Capacity
- Continuous monitoring in the background
- Help and time where needed
- When agreed on co-ownership, it can be very intensive
- Beware! When many neighborhoods all go wild at the same time due to the same deadline of 2030: capacity problem…



Level of citizen participation
Execution or ownership of a part of the Energy Transition is about citizens who are becoming part of the energy system by executing ownership of the generation, distribution or infrasture of energy. When looking at the participation ladder, this role fulfills the seventh to eighth level, 'Delegated Power' or 'Citizen Control'. The level depends on if this part of the energy system is completely executed and/or owned by the citizens or also partly by other stakeholders. Therefore, the level of citizen participation is high according to the simplified ladder of Quist (2007).

8.4 A WIDER AND DEEPER UNDERSTANDING OF THE PROBLEM

Within this chapter, the undefined and inconsistent relationship between the municipality and the local energy initiatives is discovered more widely and deeply. The workshops show insights into the initiatives' roles and municipal support. The five roles are validated and sharpened. In addition, a basic role was added. Further, the municipal support per role is defined and how the civil servants experience this as shown in Figures 45, 46, 47, 48 and 49. The results show that each role has its own specific needs concerning municipal support. In the next chapter, the insights about the relationship will be used to define the challenge differently and find the core challenge. This core challenge provides the design direction for the process strategy and action repertoire.

9. THE CORE CHALLENGE IS TO PRIORITIZE MUNICIPAL SUPPORT

Now that there are more insights concerning the undefined and inconsistent relationship of the municipality and the local energy initiatives, it is time to look at what can be done with these insights and what is the core challenge. As described each of the five roles has its own needs concerning municipal support. Within the previous chapter a whole collection of municipal support in the form of skills, resources and tasks are collected. One could simply say, the municipality should provide all this support. Nevertheless, a challenge comes forward, because the municipality has not enough capacity to provide all support at once. Therefore, it is important to be able to prioritize the support.

When thinking about prioritization, the scaling questions concerning the experience of the civil servants about providing the support can be of use. These questions give insights into the importance of the support, how much the civil servants think it is municipal responsibility to support the roles, the complexity of the support and how time consuming it is to provide the support. Another way to prioritize the support is by looking at the levels of citizen participation that are stimulated by the different initiatives' roles. The next section elaborates on the ways to prioritize the support and the challenges that occur when doing this. Finally, the core challenge is defined, which leads to the design direction for the process strategy and action repertoire.

9.1 PRIORITIZATION OF THE MUNICIPAL SUPPORT

9.1.1 The municipal experience of the support

During the second workshop the civil servants were asked four scaling questions per role to identify how they experience the municipal support. The experience is divided over how important they think it is to support the role, how much they think it is municipal responsibility to provide support per role, how complex they think it is to support a role and finally how time consuming it is to provide the support. When looking at the results of the questions there are three things that stand out as shown in Figure 50. Firstly,

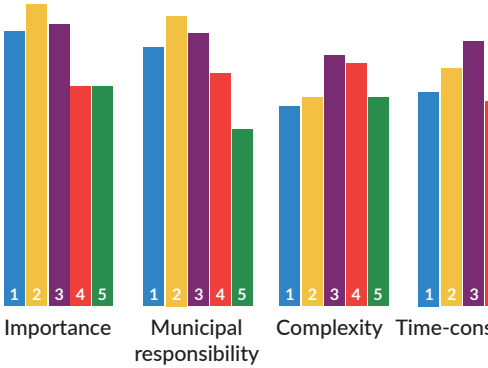
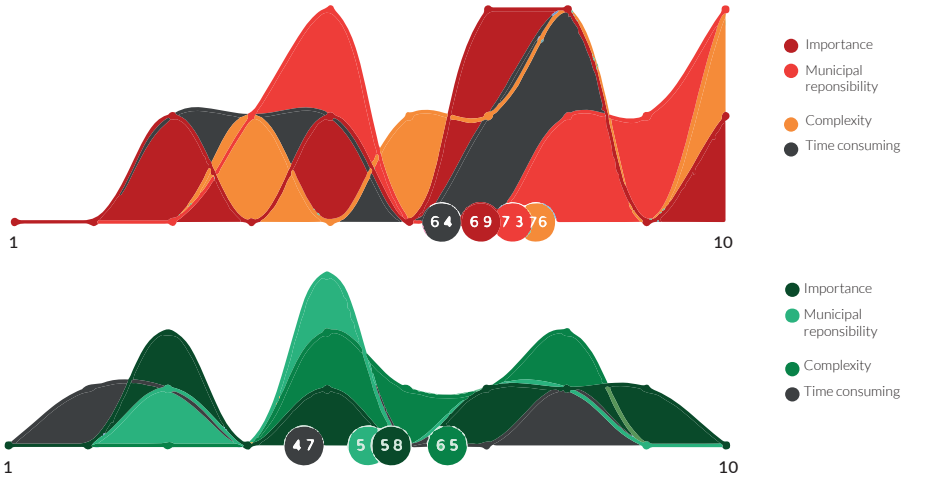


Figure 50: The results ofscaling questions.

out of the roles, the first, second and third roles are by far seen as the most important to provide support to. The second role is seen as the most important of them all. It is not clear why the civil servants see 'Creating action perspective' as the most important. It could be that the importance is time dependent and that the second role fits the current time frame in the Energy Transition and municipal strategy for the Energy Transition the best. Secondly, the support of the same three roles, namely the first, second and third, are besides the most important and also seen as the most municipal responsibility. Again, the support of the second role is seen as the most

municipal responsibility. In this case, it is also not clear why this is and if this has to do with timing. Thirdly, the support of the third role 'Partnership with municipality' is seen as the most complex and most time consuming. This could be the case because this support is more about collaboration and can be seen as the most active form of support the municipality can give. They are actually working together instead of the municipality providing support so that the initiative can fulfill the role.

The insights seem interesting and useful. Only, the opinions of the civil servants were extremely diverse. Therefore, the insights are less valuable. Overall the answers know a large variety, which means that the civil servants did not agree that much on the scaling questions. The answers for the fourth and fifth role are the most diverse and are all over the scale as can be seen in Figures 51 and 52. This could be because they know the least about these roles, because they have the least experience in supporting these roles. The opinions on the second and third role were the least diverse, however the complexity of the second role is highly diverse as well. Therefore, it could be stated that there is overall no consensus about the experience



Figures 51 and 52: The results of the scaling questions for the role 4 and 5.

of the support per role among the teams of the Energy Transition program. This lack of consensus marks the need for a way to prioritize the roles and support and also a way to come together to well argumented choices or to come to well argumented choices which can be clearly explained to others.

9.1.2 The level of citizen participation

When looking at the level of citizen participation for each of the roles, we notice a sequence. The first role and second role are of moderate level. The third role is of moderate level or high level depending on the implementation. It is important to mention that this level of citizen participation is different from the level presented in the second phase of this research in Chapter 7 for this role. This difference has to do with the changes made to the content of the role. The role was first presented as 'Advice and promotion', which was more a 'one way street' where the initiative was there for the municipality to provide insights and information about the neighborhood. Also, the initiative would promote the actions of the municipality. After the changes to this role, the role is about collaboration and a 'two way street',

where the initiative and municipality are there for each other. Therefore, the role could rise possibly to the sixth level of citizen participation 'Partnership'. The fourth role and fifth role are of high level both, where the fifth level is the highest. An overview of the participation levels per role is shown in Figure 53. The client stated that when the fourth or fifth role is fulfilled by a local energy initiative, it is important that a participation trajectory is created and started in that neighborhood to back up the role. This is important since the initiatives are not representative for the citizens. The level of citizen participation could be used to prioritize the roles and the municipal support. Only, at the moment there is no clear vision about which levels need to be stimulated currently or if higher levels of citizen participation have priority over lower levels of citizen participation.

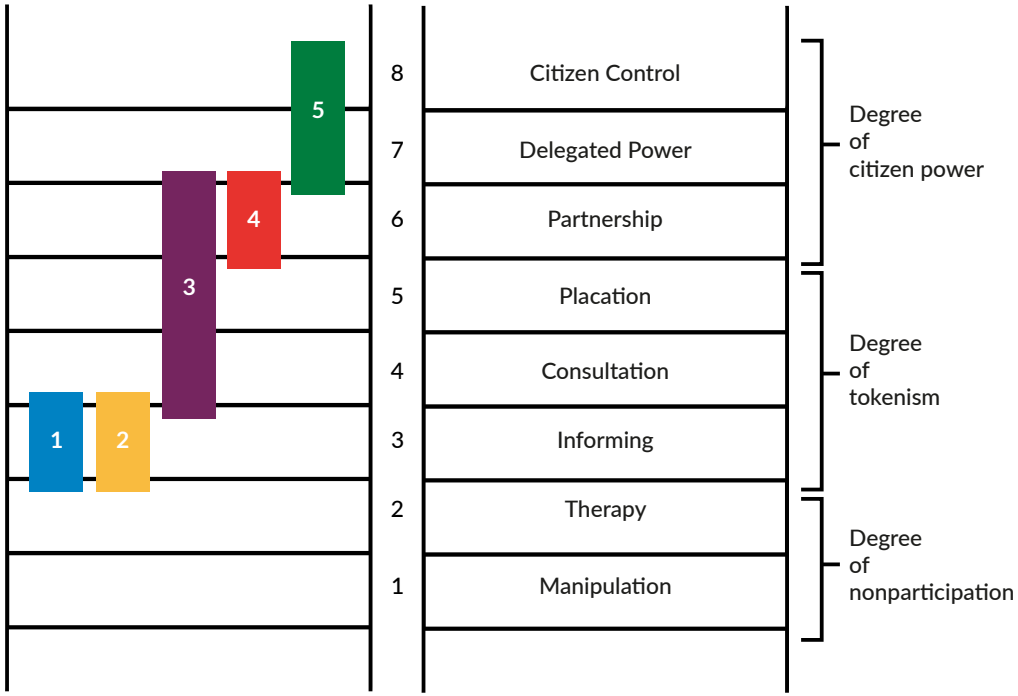


Figure 53: The stimulated level of citizen participation per role.

9.2 THE CORE CHALLENGE AND DESIGN DIRECTION

The workshops provide insights into the different roles the local energy initiative can have and what these roles contain. For each of the roles the needed municipal support was defined. The municipality is not able to fulfill all the support for all the roles for all the local energy initiatives in The Hague. The municipality does not have the capacity or is not yet ready to fulfill the support for each of the roles in every neighborhood. Therefore, the municipality needs to prioritize and make decisions about which support to provide and which support not to provide. The level of citizen participation can be used as input when prioritizing. It does not mean that higher participation levels should be given priority, because maybe some lower levels are more needed in a certain time frame of the Energy Transition according to the municipality. The scaling questions out of the second workshop were also meant to create insights in ways for the municipality to prioritize and as input for the process

strategy. However, the mutual opinion did differ a lot. This difference in opinion was even multiple times mentioned by several civil servants during the workshop itself. They were questioning each other's answers and pointed out that they are not on the same page yet. There is no consensus between the different teams within the Energy Transition program of the municipality and no obvious and simple way to prioritize the municipal support for the initiatives.

So, instead of providing them with advice which would include a process strategy and an action repertoire, it would be interesting to design a way for the client to create this strategy themselves. The strategy includes prioritising which would lead to an action repertoire. The brings the following design vision, which is two sided:

I want the participation team to be able to...

1. *create a process strategy themselves which leads to an action repertoire.*
2. *explain their choices clearly to other stakeholders.*

Therefore, the design direction is to design an instrument to form this strategy and be clear in the decision-making. The instrument should be a way to clearly communicate with each other and with other teams of the Energy Transition program about their choice and argument for supporting an initiative. Further, it should provide them a strategy which makes them able to be clear towards the initiatives about their relationship and helps them to make policies according to the support of the initiatives. Within the next chapter, different answers to the core challenge will be developed within the design direction. This development will involve two prototyping sessions with the client to co-design suitable solutions.

10. DEVELOPING AND PROTOTYPING SOLUTIONS THROUGH CO-DESIGN

The design direction defined in Chapter 9 is to design an instrument to help the client create a process strategy and action repertoire to support the different roles of the locale energy initiatives. This support can be a service the municipality provides to the initiatives. Furthermore, the instrument needs to help the client explain their choices to the other teams of the Energy Transition program as the initiatives. The client wants to create the right strategy and action repertoire. When forming the right strategy and action repertoire, it is crucial to consider all the perspectives that impact this rightness. So, in addition to the vision of Chapter 9, the aim of the design direction is as follows:

Make the participation team think from multiple perspectives.

The following section shows the ideation approach.

10.1 THE IDEATION APPROACH

The whole ideation approach exists out of many components as shown in Figure 54. When designing a practical and valuable solution, including the client in the design process is essential. Furthermore, the more iteration, the better the design will be. Within the timeframe of this project, it was possible to do two iterations. Therefore, two co-design moments are added to the ideation approach to evaluate, optimize and iterate. Overall, the approach starts with the focus lies on how to think and choose considering multiple perspectives. This is the basic concept of the solution. From this basic concept, the first prototype is developed. This prototype will be evaluated in a prototyping session with the client, and the first iteration will occur. Out of this first iteration, the second prototype will be developed. This prototype is visualized and formed into three variations. During the second prototyping session with the client, there will be a look into the second prototype and its three variations. These will be evaluated and optimized, and a second iteration will take place. This second iteration will lead to the final concept.

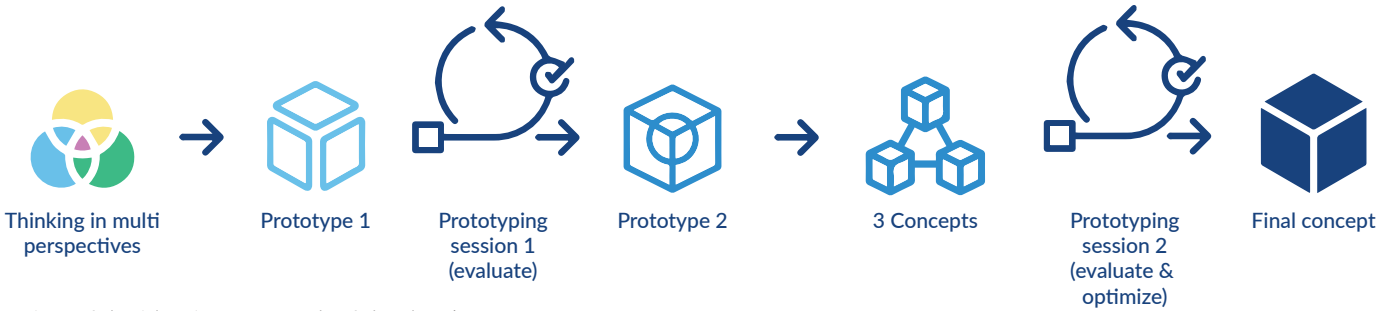


Figure 54: An overview of the ideation approach of the develop stage.

10.2 THINKING FROM MULTIPLE PERSPECTIVES

Design Thinking can be used as the human-centered approach to innovation when developing a product, services, processes, and strategy. This approach brings together desirability, feasibility, and viability (IDEO, z.d.) (see Figure 55). It is interesting for the client to use this approach to consider all the perspectives and, in this way, create the right strategy and action repertoire, which leads to the right support.

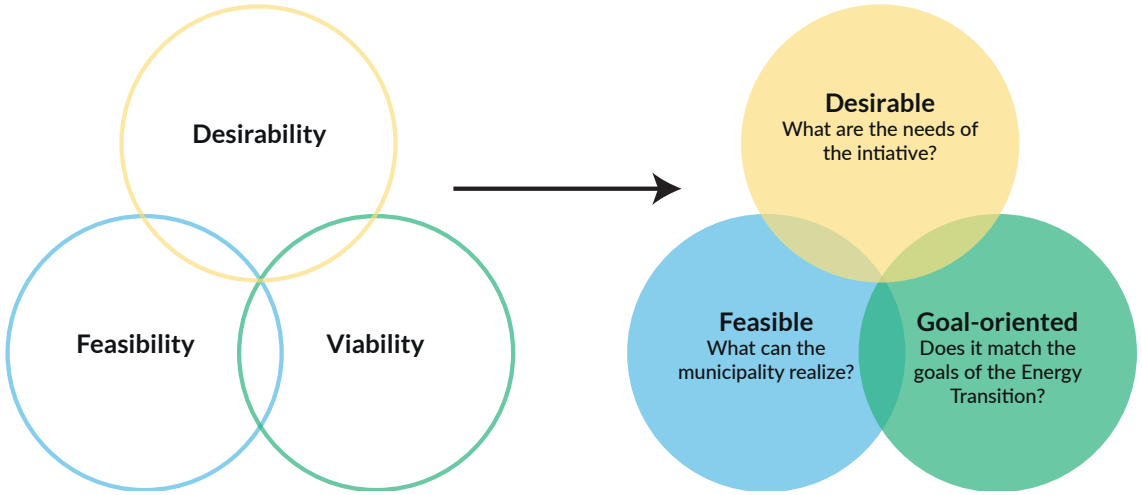


Figure 55: The three perspectives of Design Thinking translated to the context of this research.

10.2.1 Desirability

The desirability has to do with the perspective of the local energy initiatives. It is about what the initiatives wish for and what their needs are according to municipal support. These needs can differ per role. Therefore, it is essential to look at each role separately according to the desirability. Also, it is important to know which roles the initiative wants to fulfill and if they want municipal support for this role. The municipal support per role presented in Chapter 8 can function as a starting point. Since each initiative is unique, they will not all have the same needs, so a conversation about them is always necessary. The main question according to desirability is as shown in Figure 55:

What are the needs according to municipal support of the initiative per role?

10.2.2 Feasibility

The feasibility has to do with the perspective of the municipality. It is about what the municipality can realize. This starts with which roles, in general, they can support. When this is clear, they need to look into what kind of support they can provide. If the municipality can, it is dependent on the needed skills, resources, tasks, and capacity. The questions according to feasibility are as shown in Figure 55:

What can the municipality (already) realize?
- *Do they have the skills?*
- *Do they have the resources?*
- *Can they perform the tasks?*
- *Do they have the capacity?*

What can be done by their stakeholders?
What can be done in the future?
- *What do they need?*
- *Do they need to change things?*

10.2.3 Viability

The viability is about what needs to be true and what is economically viable. Within the municipality, viability is more about the municipality's goals than the financial possibility. The financial possibility is not the main issue since the municipality has no limit to money. The municipality's goals are about the Energy Transition and how to do this efficiently and effectively within the timeframe. Viability, in this case, is more goal-orientedness. The question, according to goal-oriented, is as shown in Figure 55:

Does it match the goals of the Energy Transition?

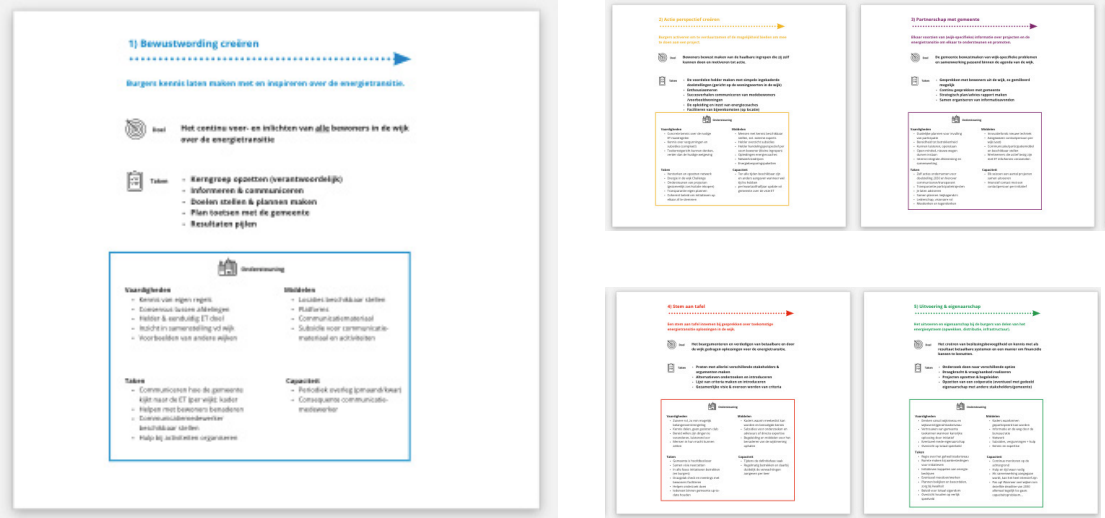


Figure 56: The first part of prototype I which includes the detailed information per role.

10.3 PROTOTYPING SESSION 1

The first prototyping session held with the client had three goals. Firstly, gain insights into the usefulness of thinking in three perspectives. The way of should help the client to think about all the perspectives in a structured way and make choices in a structured and well argumented way. Secondly, gain insights into the usefulness of the prototype in making their choice and talk about this with other teams of the Energy Transition program and the local energy initiatives. The third and last goal is to gain insights into the content of the goal-oriented perspective (green).

10.3.1 Prototype 1: Thinking in three perspectives

The first prototype exists out of three parts for each of the roles. The first part of the prototype is an overview of each role and the matched municipal support as shown in Figure 56. This overview includes all the categories as presented in Chapter 8. The second part of the prototype is a talk board with three perspectives for each of the roles as shown in Figure 57. In the up left corner, there is a short repetition about the content of the role. On the right side of the talk board each of the three perspectives is explained including the main question connected to this perspective. Finally, in the bottom right corner the three perspectives are visualized as three circles to show the interaction between the perspectives and

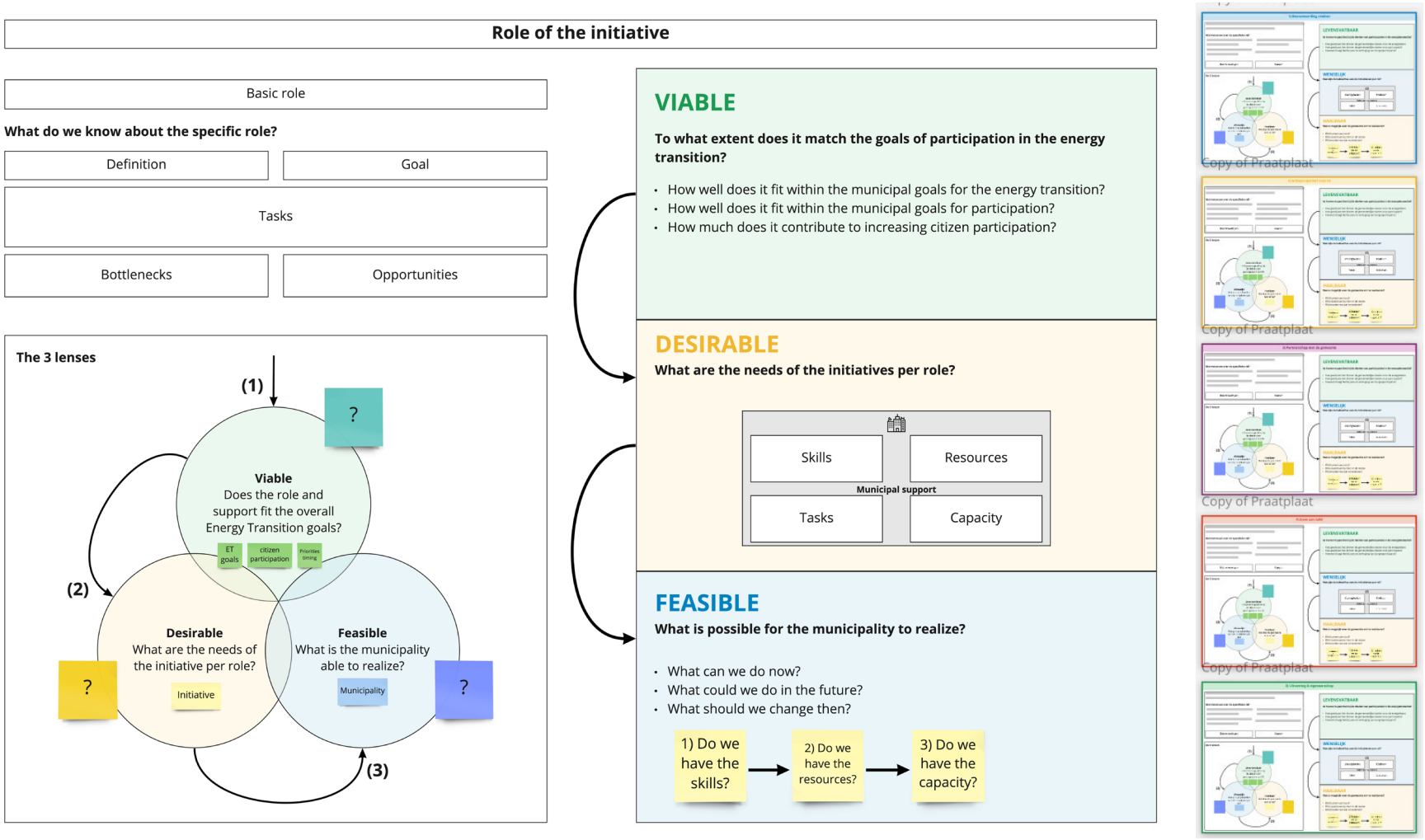


Figure 57: The second part of prototype I which include a talk board to consider each of the three perspectives per role.

to show the 'sweet spot', namely the centre where all three circles overlap. The third part of the prototype is an enlarged version of the three perspectives visualized as three circles as shown in Figure 58. This enlarged version can be used to plot the insights and arguments for each of the three perspectives concerning that specific role. All three parts of the prototype are in fivefold to cover all the five roles.

10.3.2 Methodology

The prototyping session started with an update of the project before looking at the prototype so the client was familiar with all insights and results. The detailed information about the roles and the municipal support of the workshops with the initiatives and the civil servants were explicitly shown and how these resulted in the core challenge and design direction. It is important to take the client through this process to make them understand the core challenge and to make sure that they see it the same way. After the update, the session consisted of three parts. The first part zoomed in into 'three-perspective' thinking, an explanation and an evaluation of the usefulness of this new way of thinking. Thereafter, the goal-oriented perspective was highlighted. There was room for a discussion about the content of this perspective and what kind of things are involved and have influence. Finally, the complete prototype was discussed and evaluated. The feedback was collected to use during the first iteration when improving, changing and redesigning the prototype.

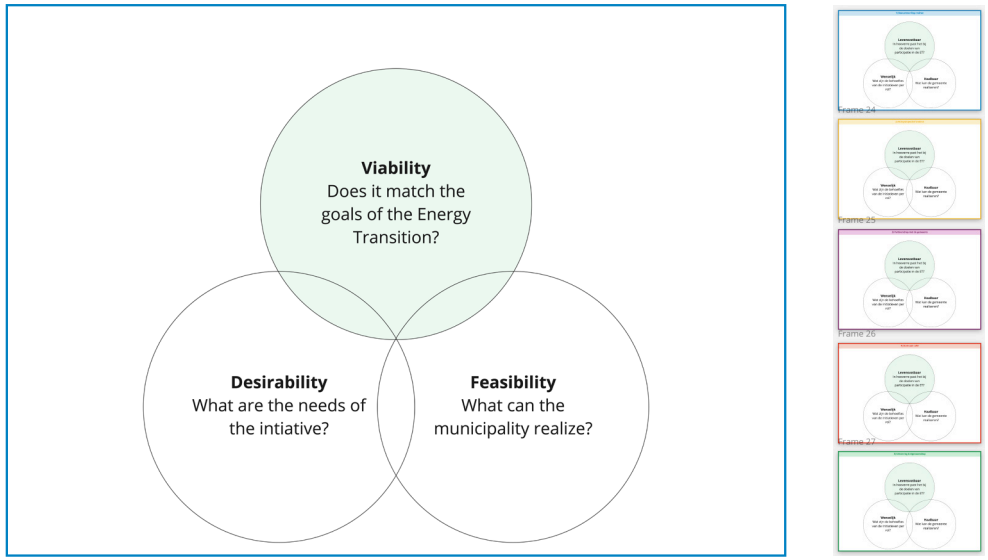


Figure 58: The third part of prototype I which includes an enlarged version of the three perspectives per role.

10.3.3 Results

In the first part of the prototyping session, the different roles and other insights were presented and explained to the client. There was a short conversation about the roles and the levels of citizen participation. It came forward that when the initiative is fulfilling the fourth role 'Voice at the table', it is important that there also is a participation trajectory executed by the municipality directly towards the citizens. Therefore, this leads to a discussion about what that fourth role is exactly withholding. The voice at the table is about the local energy initiatives allowing to provide the citizen perspective and come

up with alternative solutions. However, it can not replace the citizen participation directly between the municipality and the citizens. This results in that when the participation trajectory is executed the fourth role changes slightly especially since they are considering a Citizens' Council as participation technique. The initiative will join the trajectory as an expert and not as representation of the citizens. As one of the experts the initiative will provide insights, information, alternatives and with more focus on the citizen perspective.

After going through all the roles, I introduced the new way of thinking in the three perspectives using the first talk board. The first feedback of the client on the new way was positive. The client said that at the moment they had all the perspectives in their heads, but all mixed up and not categorized like this. This new way of thinking is really useful to get a better overview on what is important to take in consideration when determining the municipal support. Subsequently, the two talk boards were explained and later we used the second talk board to zoom in at the goal-oriented perspective. The talk boards were interesting according to the client. However, when considering the usage of the talk boards to talk with other teams of the Energy Transition program or even with local energy initiatives they seemed too abstract for the client. The client pointed out that to be able to use it in a conversation it should help them to provide a clear explanation of the reasoning and decision-making. Therefore, it needs more structure and concreteness. This is also needed to provide more guidance when reasoning and making the decisions. Another insight was that they need to think about all the roles at the same time, because it helps to get an overview. Therefore, a talk board is needed where all the roles are integrated together. The client mentioned that it would be really valuable if they can provide clear insight in their reasoning and decision-making via such an instrument. 'When you are clear, you have something to fall back to'.

At last, we zoomed in at the goal-oriented perspective. The question was what this perspective contains in the eyes of the client. The client looked back at the different roles and stated that the first, second and third role should be possible for each initiative at any time. Furthermore, the client mentioned that the roles can be linked to certain stracks they are developing. Each neighborhood will be a certain track. There will be three tracks, namely track zero, track one and track two. Track zero is the starting point when nothing is happening in the neighborhood according to the municipality. Within this track it should be possible to fulfill the first, second and third role as initiative. Track one is about making the houses transition ready in the neighborhood. Within track one, it should be able to fulfill the first, second, and third role as initiative and the fourth and fifth role if they come up with it themselves. Track two is about making the houses transition ready and also looking at possibilities around clean energy. Within the second and final track, it should be possible to fulfill all five roles as initiative and this will all acceptively be asked and initiated by the municipality.

10.3.4 Iteration 1

For the second prototype it is important to ask the right questions at the right moment. Furthermore, it should be possible to go through the three perspectives multiple times, because out of the first prototyping session it came forward that there is no harsh sequentiality between the three perspectives. Therefore, three

main questions are defined including an amount of sub-questions. The prototype has the client as the primary target group. The other teams of the Energy Transition program are the secondary target group. The local energy initiatives are the tertiary target group. Therefore, the prototype also knows a primair, secundair and tertiary goal. The primary goal is for the client to create a well argumented strategy and action repertoire for the municipal support of the initiatives. The secondary goal is for the client to be able to explain the strategy and action repertoire to other teams of the Energy Transition program and to have a conversation about it. The tertiary goal is to have a conversation about the municipal support with the local energy initiatives and provide them with clearance. The questions of the prototype are as follows:

1. Which roles are we going to support?
- *What track is the neighborhood on?*
- *Are there promising projects in the neighborhood?*
- *Which roles do we want to support?*
- *Which roles are of interest/relevant?*

2. What support do we want to offer?
- *What support is needed?*
- *To what extent do we want to provide that support?*
- *In what order do we want to offer the support?*

3. How are we going to provide the support?
- *What support can we offer?*
- *What support can not be provided but must be?*
- *How are we going to provide the support?*

10.4 PROTOTYPING SESSION 2

The second prototyping session is again held with the client. The session had as its goal to evaluate and optimize the renewed prototype. The evaluation is divided into two parts. In the first place, the evaluation involves looking at the prototype itself and how it matches the design vision and aim. The second part of the evaluation involves looking at three concepts to visualize and shape the renewed prototype. The optimization of the renewed prototype is divided into four parts. Each part involves another detailed part of the renewed prototype that needs extra input from the client.

10.4.1 Prototype 2: Action board

The second prototype is an action board based on the three main questions and their sub-question from the first iteration (see Section 10.3.4) and is shown in Figures 59, 60, 61 and 62. Therefore, all five roles are included in this single action board. The client is guided through each sub-questions, and for each sub-question, the three perspectives are taken into account. The action board is built out of five layers:

1. The first layer includes the questions.
2. The second layer includes the desirability and, therefore, the initiative perspective.
3. The third layer includes the feasibility and, therefore, the municipality perspective.
4. The fourth layer includes the goal-orientedness and, therefore, the Energy Transition perspective.
5. Finally, the fifth layer represents the outcomes of each of the sub-questions and the main questions. The answers to the sub-questions are pink, and the answers to the main questions are purple.

Besides the main and sub-questions, the action board also includes a trigger and a starting point. The trigger is the reason why the action board should be used. This trigger can occur in each of the

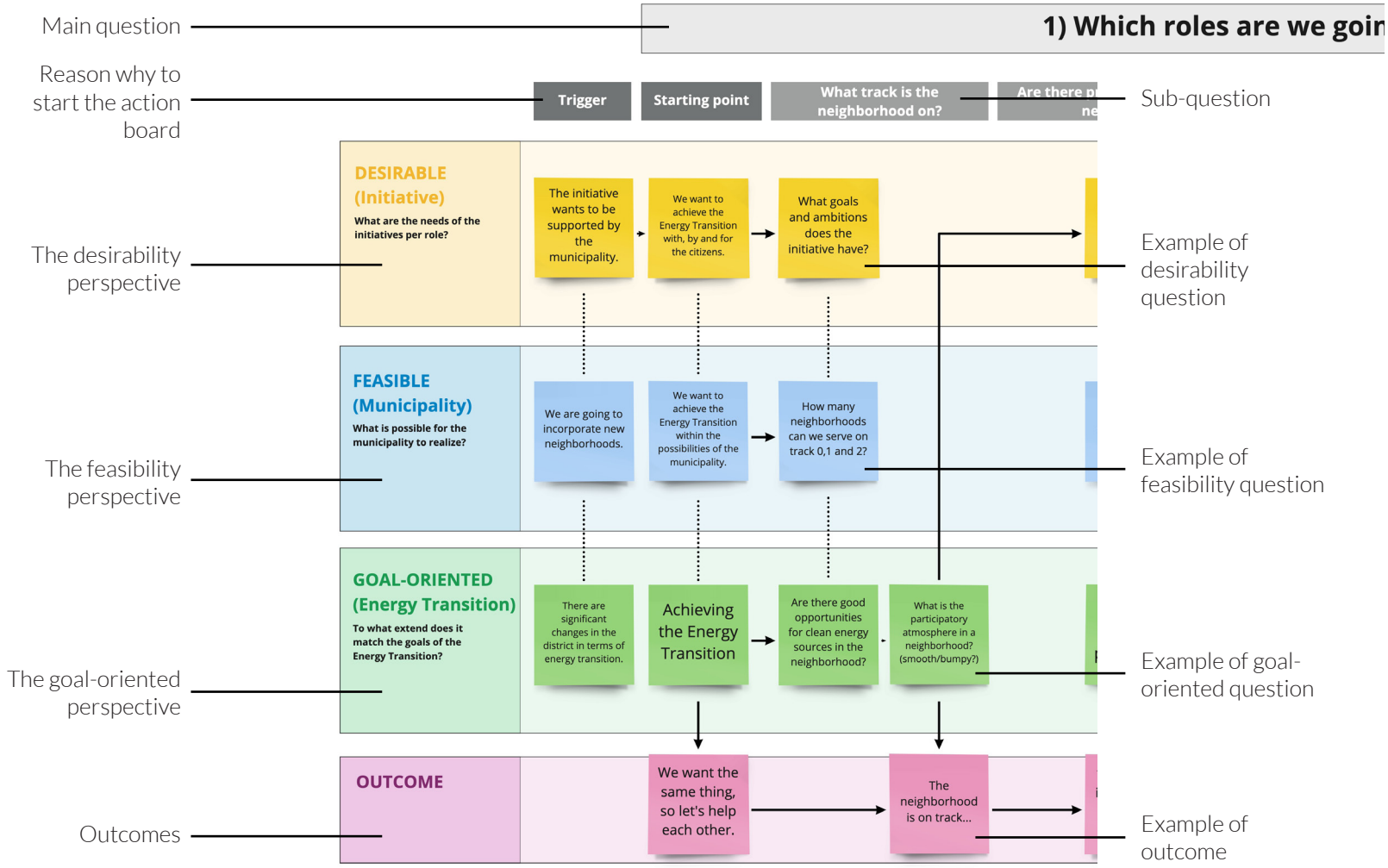


Figure 59: The second prototype with short explained per element.

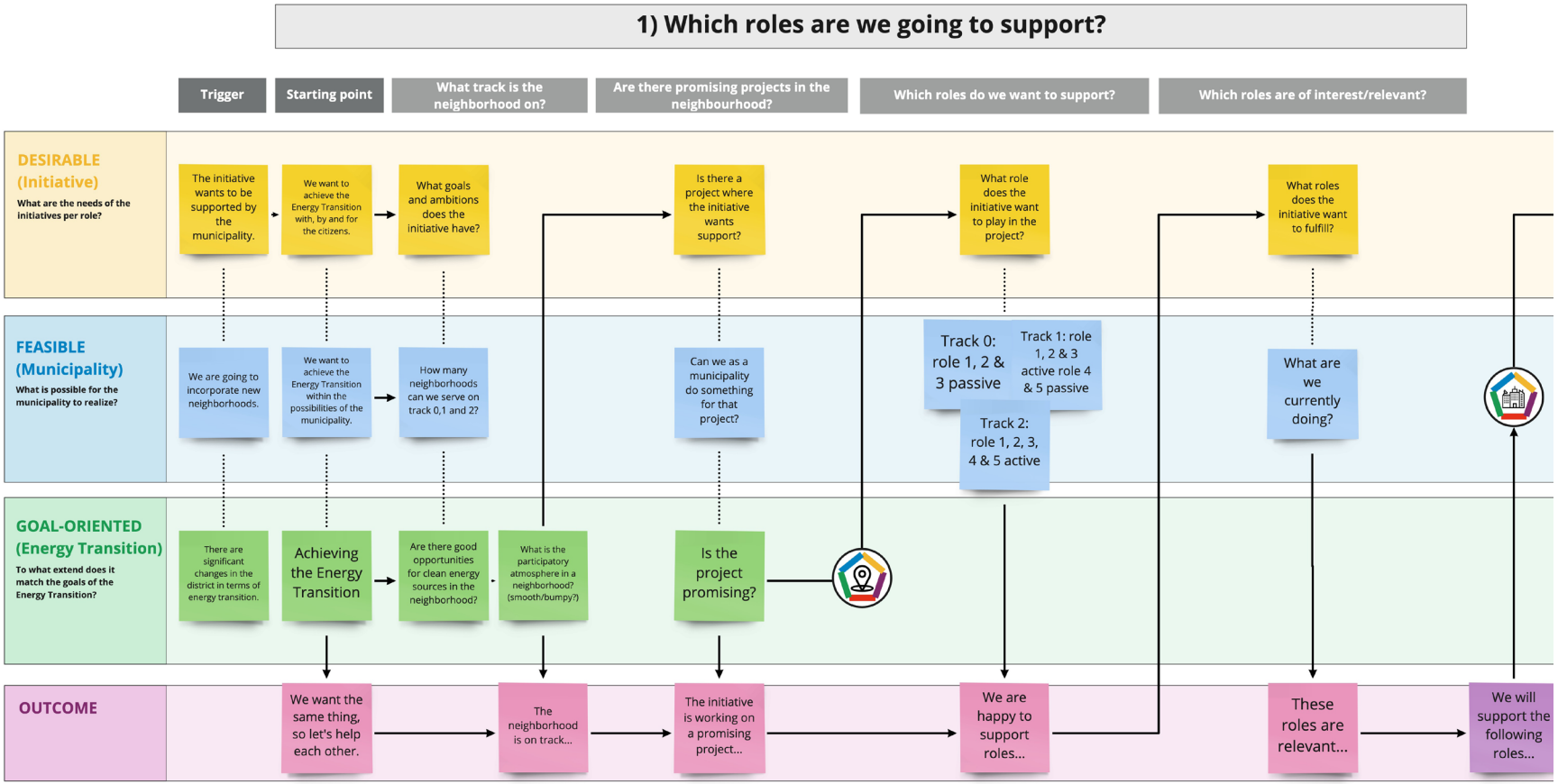


Figure 60: The second prototype (part 1/3).

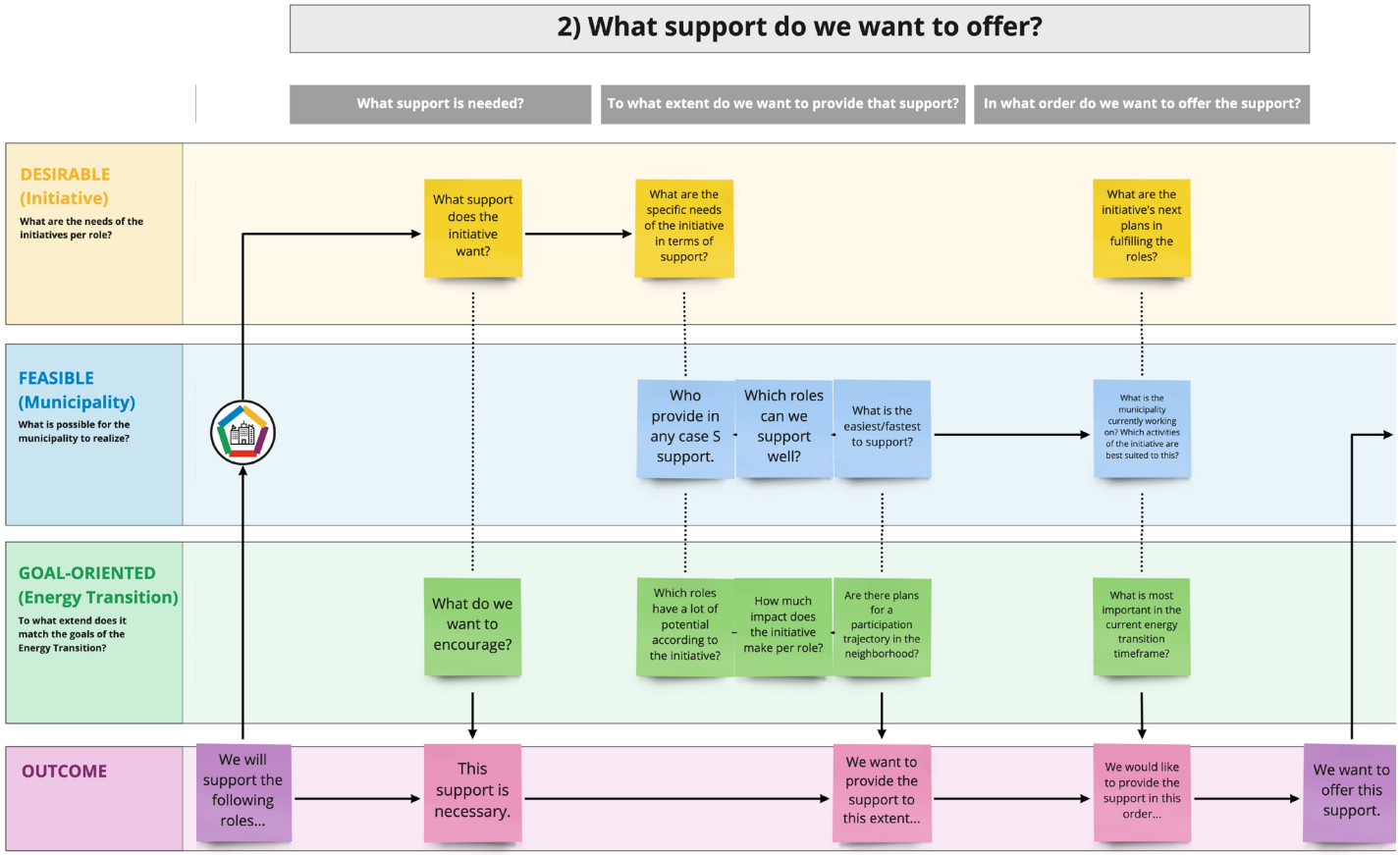


Figure 61: The second prototype (part 2/3).

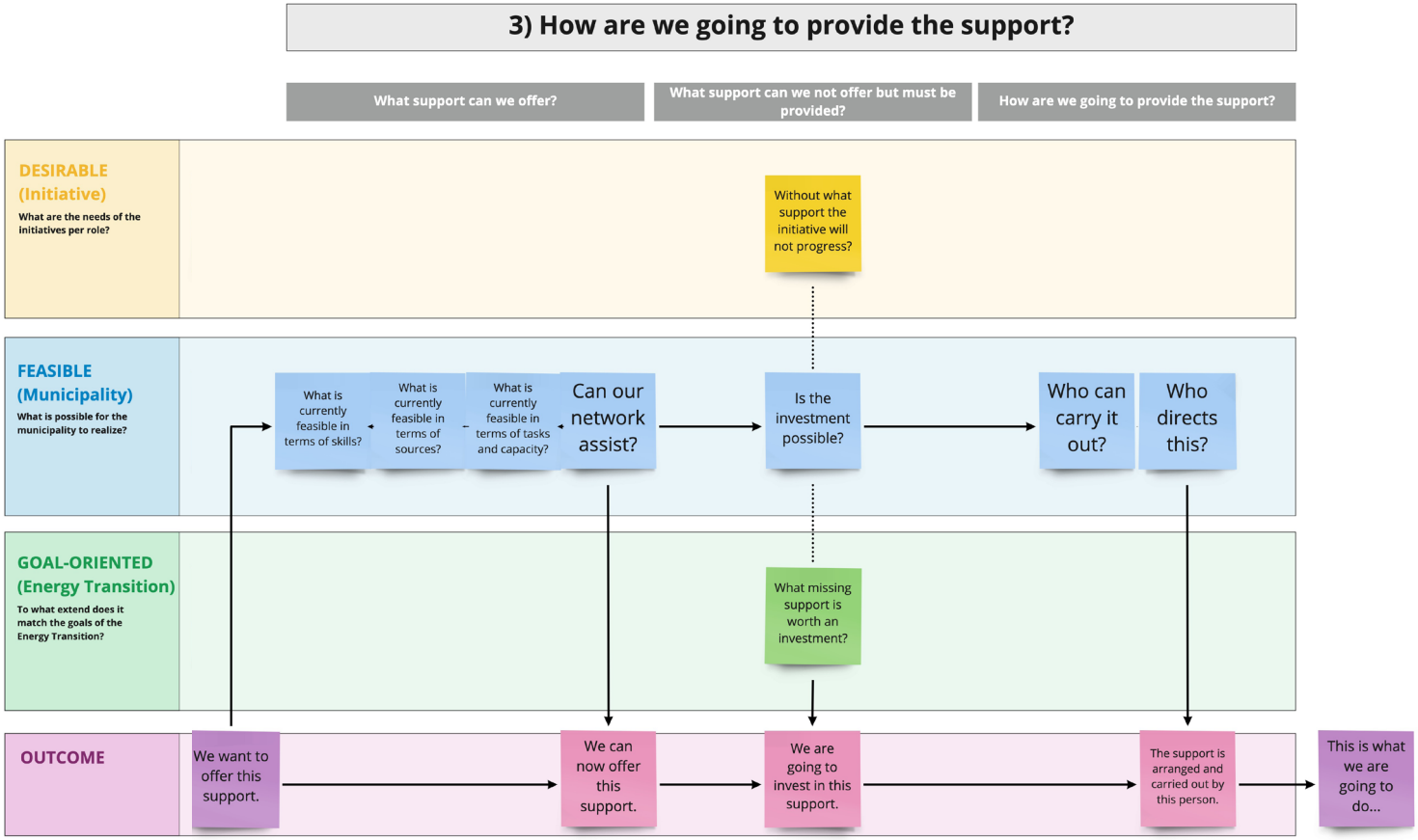


Figure 62: The second prototype (part 3/3).

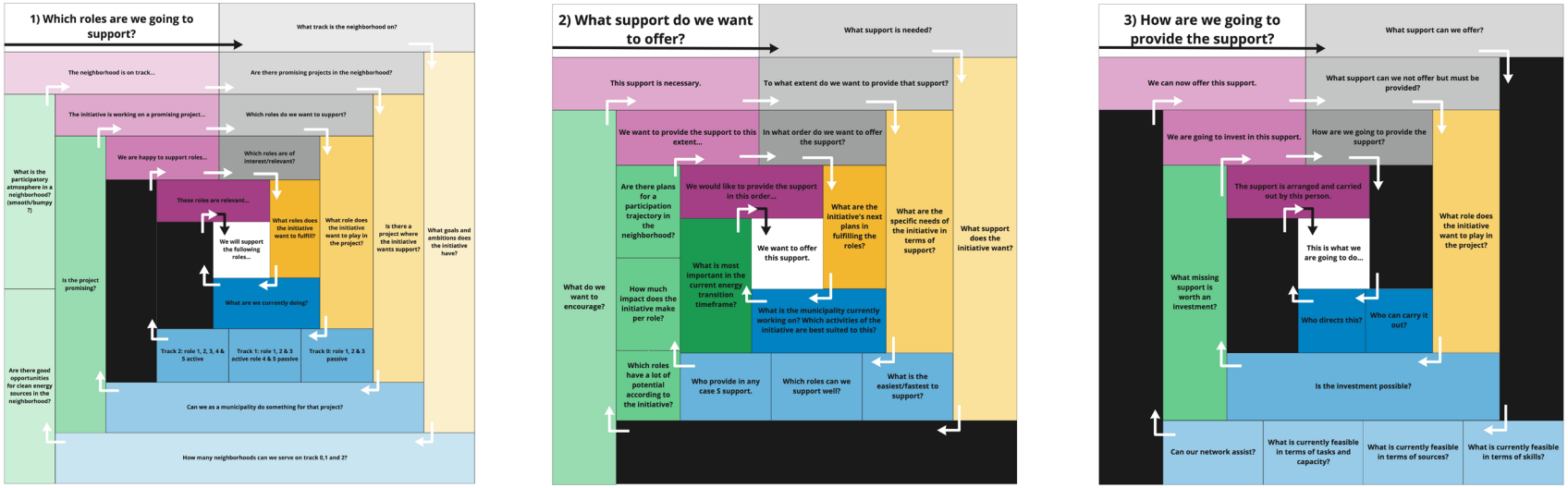


Figure 63: Concept 1: Squares.

three perspectives. The starting point is explicitly added to create optimistic energy. The starting point sets the mindset, which should be about collaboration and helping each other instead of struggling and being hostile.

Furthermore, there are two special moments in the action board. The first moment is marked with a location pin which stands for the initiatives. At this moment, information about the different roles is needed. The second moment is marked with the municipality, which stands for municipal support. At this moment, information about the municipal support per role is needed.

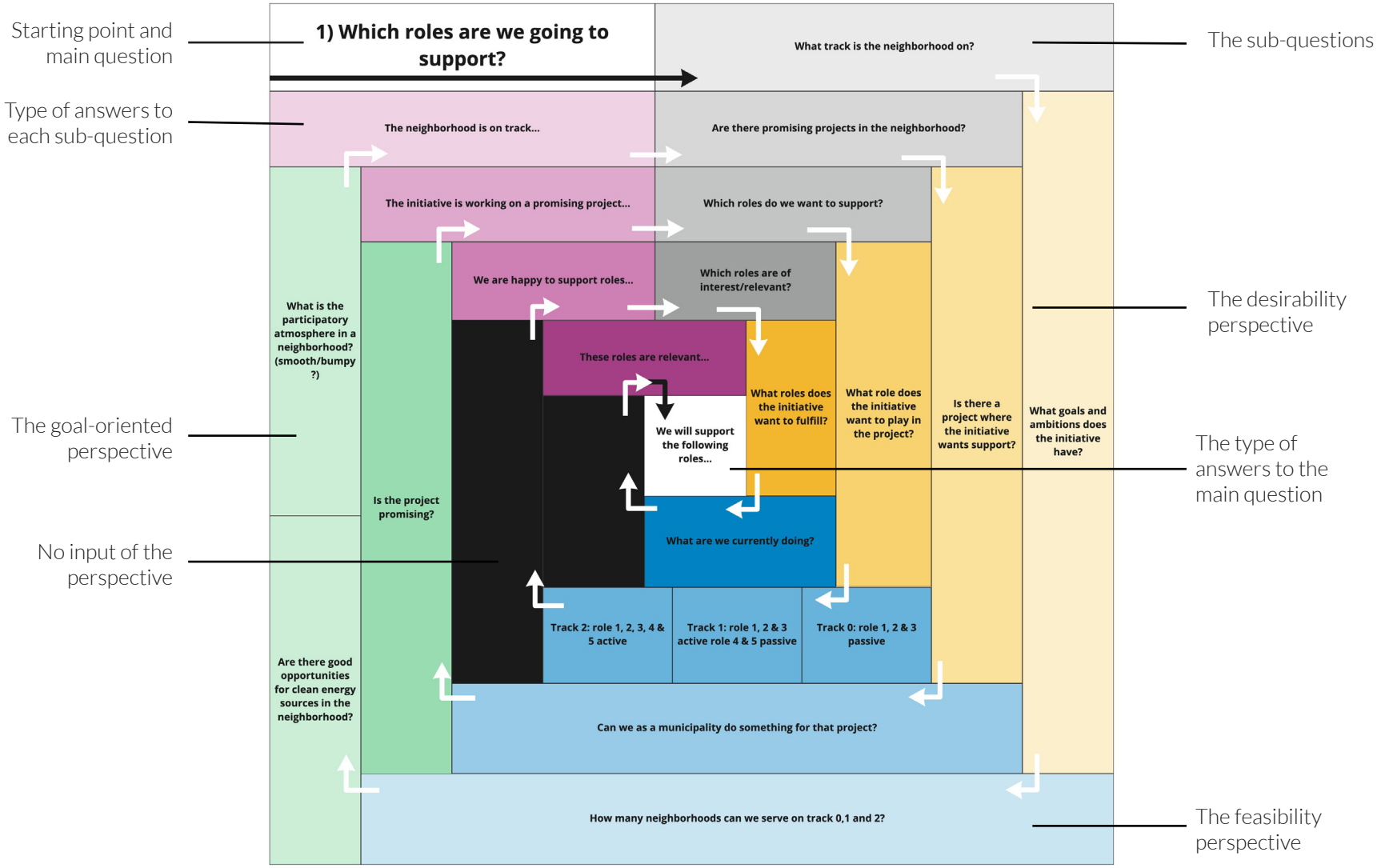
10.4.2 The three variations

Out of the second prototype, three variating concepts are developed. The three concepts vary in visualization and functions.

10.4.2.1 Concept 1: Squares

The first concept is based on three large squares as shown in Figures 63 and 64. Each of the squares represents one of the main questions. Subsequently, each of the squares is divided over the sub-questions, the three perspectives, and the outcomes, which are the same as the five layers of the second prototype. In the left top corner is the start, and when following the arrow, one gets deeper and deeper in the square. It can be compared with a snail house. In the middle of the square is the final answer to the main question, and one could continue to the next square. This concept of squares gives an overview of all that should be considered for each perspective and provides a natural flow. One could easily see all the questions connected to one perspective since they are all packed together on one side.

Figure 64 Concept 1: Squares with a shot explanation per element.



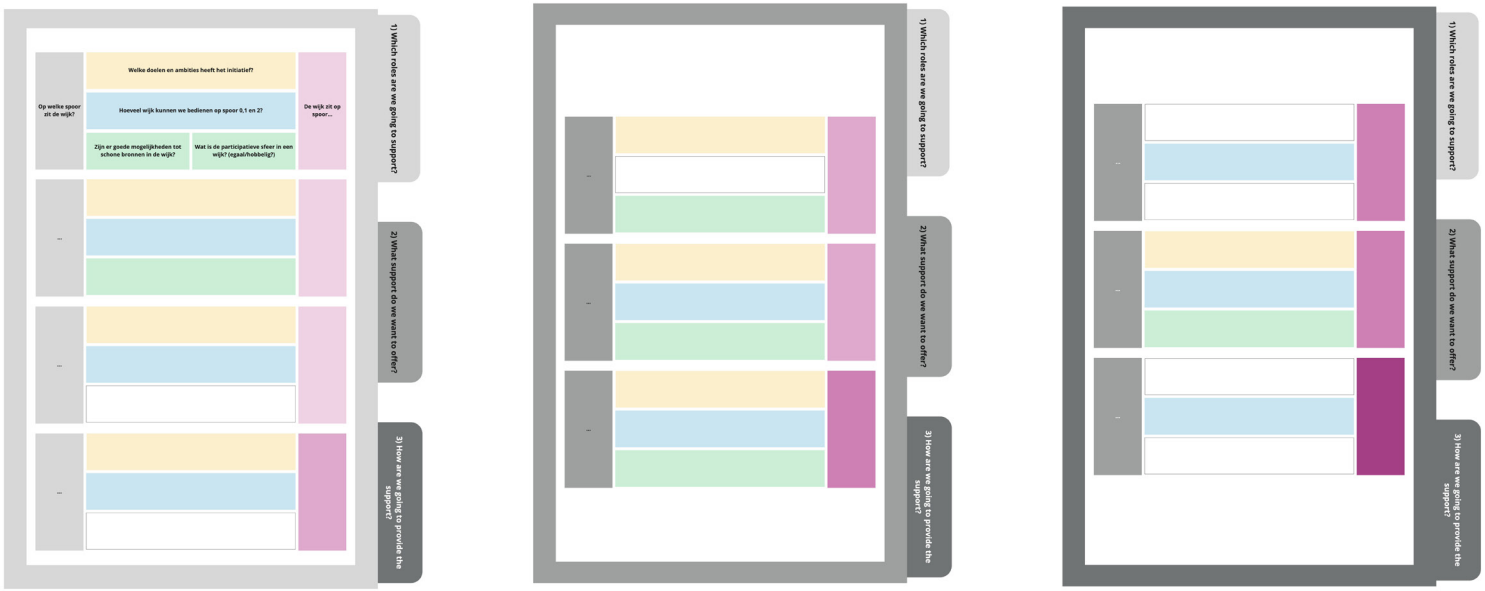
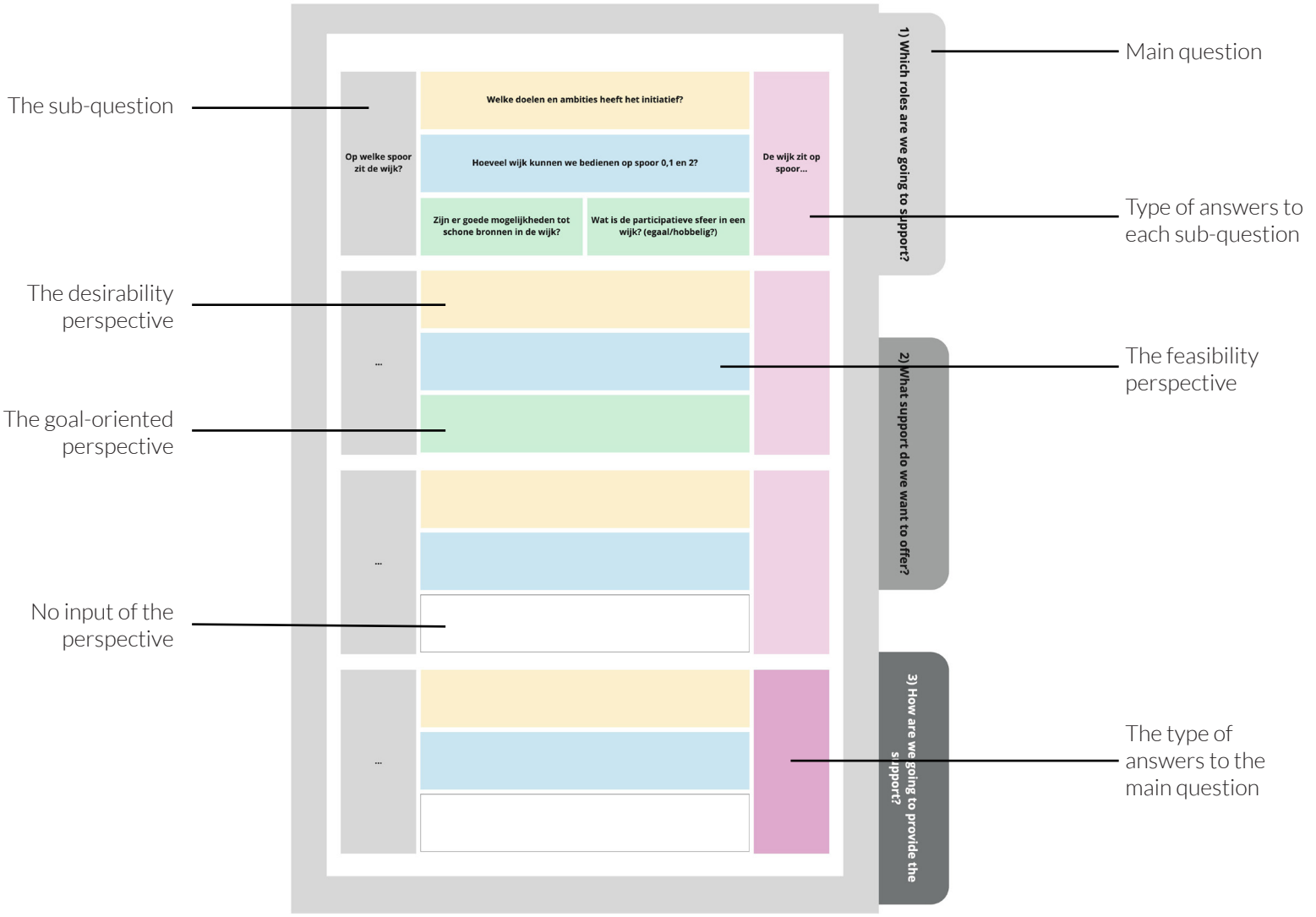


Figure 65: Concept 2: Flows.

10.4.2.2 Concept 2: Flows

The second concept is based on three tab files as shown in Figures 65 and 66. Each tab on the right of the page represents one of the main questions. All the sub-questions are shown on the left, and the type of answer for each sub-question is shown on the right. In the bottom right corner, the type of answer to the main question is shown. In between the left and right sides, the three perspectives are in between the questions and the type of answer. The perspectives are presented as flows from left to right or layers as in the second prototype. When the main question is answered, one continues to the next tab. This concept of flows gives an overview of each of the main questions. One could easily see all the questions connected to one sub-question.

Figure 66: Concept 2: Flows with a short explanation per element.

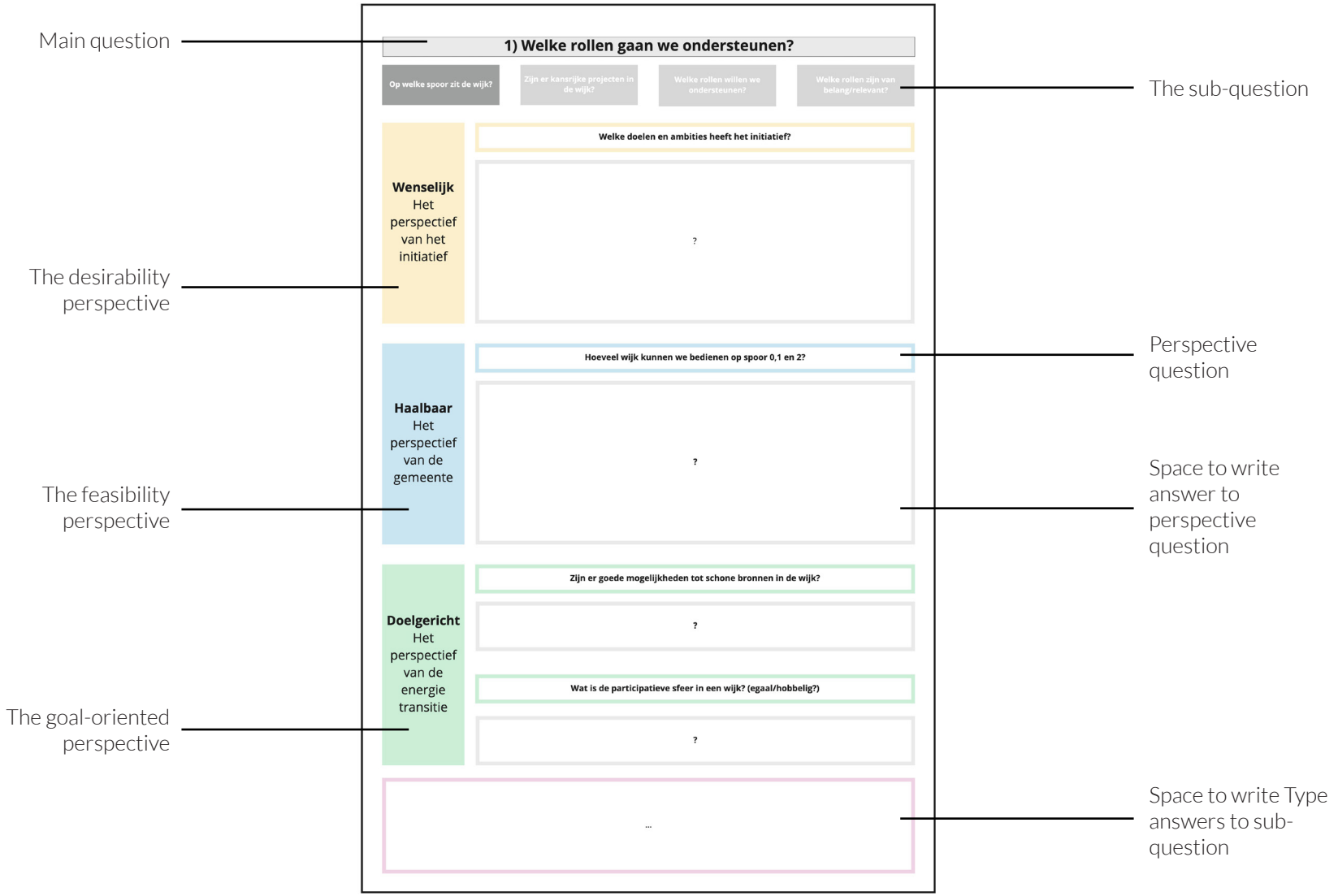


10.4.2.3 Concept 3: Forms

The third concept is based on the ten sub-questions of the main questions. Each of the sub-questions has a worksheet as shown in Figures 67 and 68. On this worksheet, the main question is shown, and all the sub-questions. The sub-question of this particular worksheet is highlighted. Following are the three perspectives with their questions for the sub-question. Below each perspective question, there is room to write the answer and other notes. On the bottom of the worksheet, there is room to write the answer to the sub-question and other comments. This concept does not provide an overview but zooms in into each sub-question separately and provides a way to interact with the concept. These worksheets can be used to document and further to write things down when having conversations with initiatives.

Figure 67: Concept 3: Forms.

Figure 68: Concept 3: Forms with a short explanation per element.



10.4.2 Methodology

The second prototyping session started with a look at the second prototype, the action board. The prototype was explained, and the usefulness was discussed according to the design vision and aim. As follows, three questions of the goal-oriented perspective were highlighted:

1. *Are there good opportunities for clean energy sources in the neighborhood?*
2. *Is the project [of the initiative in that neighborhood] promising?*
3. *How much impact does the initiative make per role?*

The client was asked about the three specific questions and to provide insights into how these questions could be answered when using the action board as can be seen in Figure 69. After looking at the three goal-oriented questions, the focus lies on one of the sub-questions:

To what extent do we want to provide that support?

The support could be divided into three sizes to give the client a way to nuance the municipal support per role. Therefore, an assignment was presented to the client to do together as shown in Figure 69. In this assignment, all the information about the content of the municipal support per role was presented, and the client was asked which of these support elements belonged to small support, medium support, and large support. The client was also asked to give insights into the way of thinking behind this division.

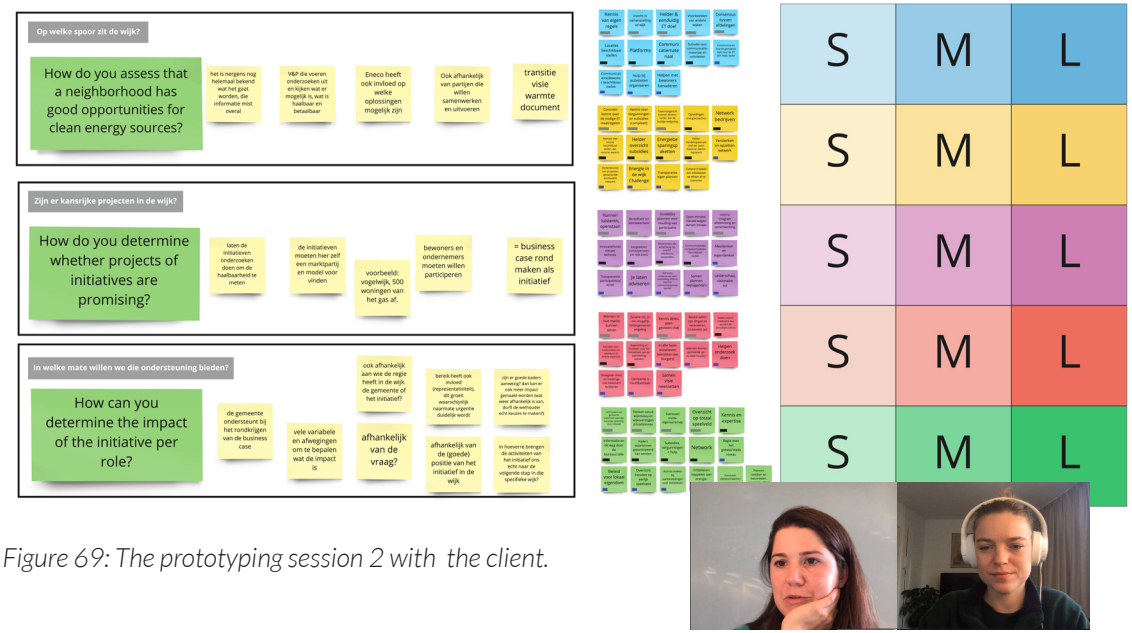


Figure 69: The prototyping session 2 with the client.

The last part of the prototyping session was about the three concepts for visualizing and forming the action board. As explained in the previous sections, the concepts are different in design, compactness, focus, overview, and interaction possibilities. The client was asked about the usefulness and function preferences of the concepts. Furthermore, feedback was gathered on how one or more of these concepts could be developed to develop an improved solution to the core challenge and fulfill the design vision and aim.

10.4.3 Results

Overall, the second prototype is seen as more structured and concrete by the client. The client understood the prototype clearly, and the division of the layers made sense.

'I do think that it [the prototype] reflects very well and process-wise which choices and decisions you make in this regard. It [the prototype] does make it very clear.'

The main questions and sub-questions seemed right. When looking at the questions for each of the perspectives, an update needs to be made. Within the first main question, the track of the neighborhood is determined. The municipality works with different tracks, and each track represents another position in the Energy Transition timeframe. In the renewed prototype, tracks 0, 1, and 2 are mentioned. However, the municipality has now become clear that each neighborhood should be at least track 1, ' becoming transition ready.' Therefore, track 0 needs to be removed as an option out of the action board.

10.4.3.1 Are there good opportunities for clean energy sources in the neighborhood?

When looking for clean energy sources in the neighborhood, the client stated, *'it is nowhere completely known what it will be, that information is missing everywhere.'* Nevertheless, the Preparation & Planning team of the Energy Transition program performs research to look at the possibility according to clean energy sources, what is feasible and affordable. Large energy companies like Eneco also have an influence on which solutions are possible. Further, the clean energy sources need to be executed by an independent party that needs to be willing to collaborate and do the job.

10.4.3.2 Is the project [of the initiative in that neighborhood] promising?

When looking at which of the initiative's projects are promising, the initiatives themselves are asked to research this. The municipality provides the initiatives with subsidies to pay for these researches. Furthermore, the potential of the project depends on the developed business plan. The business plan and model need to be complete and feasible, and enough citizens and entrepreneurs need to be willing to participate in the plan. At last, the initiatives themselves need to find a market party to collaborate with and who helps execute the business plan.

10.4.3.3 How much impact does the initiative make per role?

When looking at the amount of impact the initiative makes per role, the client states, *'there are many variables and considerations to determine the impact.'*

First, it is important to have a clear frame available in that neighborhood. *'If there is a clear frame, then it is also possible to create more impact.'* The clearness of the frame is, among other things, dependent on the boldness of the city councilor and if this councilor makes real choices.

Secondly, the connection between the initiative's activities and the next step in the Energy Transition is important. *'To what extent does the initiative's activities take us to the next step in that particular neighborhood?'*

Thirdly, the representativeness and the position of the initiative play a role. The reach of the initiative is influencing the impact. This reach will probably grow as the urgency becomes more convincing over time. Again, the demand-supply balance is also essential, which creates a feasible business case as explained in Section 10.4.3.2. The municipality could help with the development and improvement of the business case.

Lastly, it is crucial who has control in the neighborhood. *'Is the municipality in control*

and initiating the most or the initiative?'

10.4.3.4 Multiple sizes of support

Regarding the possibility of providing municipal support in different sizes, this was definetly something the client thought would be helpful and practical. However, to define these sets of support, namely small, medium and large a discussion with the other teams of the Energy Transition program is necessary. Therefore, it was not possible to define the sets at this moment and the creation of this set is a recommendation to the municipality when further developing the specifics regarding the municipal support.

10.4.3.5 The three concepts

When considering the three concepts, the client preferred the first and third concepts. The first concept showed a clear overview of all the questions. The third concept provides an interactive way of using the concept. The client explained that the overview and the more detailed interactive concept are needed for clear and practical usage. Therefore, there is no preference between the concepts but a recommendation to develop both.

10.4.4 Iteration 2

The second iteration has two focus points. The first is about the information input into the final concept, and the second is about the visualization and form of the final concept. For the first focus point, the differences according to the tracks need to be updated and changed. So, track 0 needs to be removed, and only track 1 and 2 should stay. Further, the three goal-oriented perspective questions' insights and input need to be integrated into the final concept.

When looking at the second point, namely visualization and form, the concept improvement includes combining the first and third concepts. Both concepts need to be developed further and form one practical concept together. Therefore, it must be easy to refer to each other, and the function of both these parts of the final concept should be clear.

10.5 THE LAST STEP TOWARDS FINAL CONCEPT

Overall, the development and co-design in the form of two prototyping workshops have led to two prototypes and three concepts. The prototype was renewed into the second prototype. For this second prototype, three varying concepts were developed. The final concept will include a combination of the first concept and the third concept. Further, other final iterations need to be added in the form of informational input. The next chapter presents the final concept and explains it in detail.

11. THE FINAL CONCEPT TO CREATE A STRATEGY AND ACTION REPERTOIRE

The two prototyping sessions and iterations led to an improved solution to the core challenge. Within this chapter, the improved solution, the final concept is presented and explained. The final concept helps create a defined and consistent relationship between the municipality and the local energy initiatives. The final concept is an instrument that gives the client a way to create a process strategy themselves, leading to an action repertoire containing the support to provide to the initiatives. Further, the instrument helps the client explain their choices clearly to other stakeholders like other teams within the municipality or the initiatives. The instrument does this by making the client able to think from multiple perspectives, namely the perspective of the initiatives (desirability), the municipality itself (feasibility), and the Energy Transition (goal-orientedness).

11.1 THE FINAL CONCEPT EXPLAINED

The final concept is built out of three main questions which are the following questions:

1. *Which role are we going to support?*
2. *What support do we want to offer?*
3. *How are we going to provide the support?*

For each of the main questions a couple of sub-questions are added. The first main question has four sub-questions explained in Section 11.1.1, 11.1.2, 11.1.3 and 11.1.4. The second main question had three sub-questions. These sub-questions are explained in Section 11.1.5, 11.1.6 and 11.1.7. The third and last main question has again three sub-questions, which are explained in Section 11.1.8, 11.1.9 and 11.1.10. Within each of the sub-questions, the three perspectives are considered and it results in an outcome. Not for each sub-question all three perspectives are relevant. Therefore, some sub-questions only include one perspective or two.

11.1.1 The sub-questions and their connected perspective questions

11.1.1.1 What track is the neighborhood on?

The first sub-question is about the track of the neighborhood. Earlier it was mentioned that the municipality divides the neighborhoods over two tracks. The first track is about making the neighborhood transition ready. This readiness includes energy preservation, isolating houses and making sure they can be connected to a clean energy source in the future. When looking at the second track this also includes the transition readiness but the addition of a clear energy source is added. For the neighborhoods on the second track a plan will be created for the clean energy source(s) and how to make the transition to this source or sources with the whole neighborhood. The client has connected the track to the different initiative roles. Therefore, it is important to know which track the neighborhood is placed on. Well, the way this track is decided is based on each of the three perspectives. When looking at the initiative perspective, the following question is relevant:

What goals and ambitions does the initiative have?

The goals and ambitions of the initiative can have an influence. If the initiative

is working on the clean energy source possibilities in their neighborhood it may be more interesting to consider choosing for the second track. However, choosing the second track may not always be possible. Therefore, the following questions is relevant for the municipality perspective:

How many neighborhoods can we serve on track 1 and 2?

If the municipality is not able to serve another neighborhood on the second track according to the capacity it will not be an option at all. Finally, when it is possible to have another neighborhood on the second track. The following two questions are relevant for the Energy Transition perspective:

Are there good opportunities for clean energy sources in the neighborhood?

What is the participatory atmosphere in a neighborhood? (smooth/bumpy?)

When making the step towards a clean energy source, it is helpful when there are good opportunities in the neighborhood. This can make the process easier. However, the municipality should choose for itself if it always wants to go for the easy choice. It could be that at some point the municipality wants to explicitly gain experience in more complex situations and neighborhoods. Nevertheless, it is therefore important to consider the first question of the Energy Transition perspective. The second question is about the participation atmosphere. Participation atmosphere is about the way the citizens in that neighborhood are collaborating with each other, the municipality and other stakeholders. When this collaboration is not going very smoothly at the moment it may not be the best moment to move from the first track to the second track. In that case the participation atmosphere needs attention first. Finally, when all three perspectives are considered, it will bring the following answer:

The neighborhood is on track...

11.1.1.2 Are there promising projects in the neighborhood?

The second sub-question is about promising projects in the neighborhoods. These are projects of the initiative. The focus of these projects can be on clean energy sources, collectively buying of solar panels or isolation material or other things. If there is a promising project available, this could have influence in the roles of the initiative that will be supported by the municipality. When looking at the initiative perspective the following question is relevant:

Is there a project where the initiative wants support?

When looking for promising projects, it is first important if there are projects at all. When there are projects happening it is the question if the initiative wants or needs support in the execution of the project. If it is the case that the initiative wants municipal support, the following question is relevant for the municipality perspective:

Can we as a municipality do something for that project?

When the initiative wants municipal support, it is essential that the municipality actually can do something useful. Therefore, the municipality should think for itself if they could help in some way. When the municipality is able to do something,

the following question is relevant for the Energy Transition:

Is the project promising?

In the end the project must contribute to the overall goals of the Energy Transition. Therefore, it is important to consider if the project fits these goals. Furthermore, the project needs to include a well-defined business plan and case. Also citizens and entrepreneurs need to be willing to participate. Finally, when all the perspectives are taking into consideration, it will result in the following answer:

The initiative is working on a promising project...

11.1.1.3 Which roles do we want to support

The third sub-question is about which roles the municipality wants to support. This is dependent on the initiatives perspective and the municipality perspective. The following question is relevant for the initiative perspective:

What role does the initiative want to play in the project?

When the initiative is working on a project that is found to be promising, the question is about the content of the project. The content of the project is connected to which role the initiative plays in this project. This role will be one of the five identified roles. When there is a promising project and the role is clear, there is one role set. It could be that the municipality is willing to support more roles. This depends on the following two questions relevant for the municipality perspective:

Track 1: role 1, 2 & 3 active role 4 & 5 passive

Track 2: role 1, 2, 3, 4 & 5 active

So, the track defined with the first sub-question is decisive for the other roles that the municipality wants to support. It is not said that the initiative can not fulfill other roles but only that these will not get any municipal support. When the role of the initiative perspective question and the roles of the municipal perspective question are clear, it will results in the following answer:

We are happy to support roles...

11.1.1.4 Which roles are of interest/ relevant?

The fourth sub-question is the last sub-question of the first main question. The final sub-question is about which roles the municipality is going to support. This depends on the initiative perspective and the municipality perspective. The following question is relevant for the initiative perspective:

What roles does the initiative want to fulfill?

Eventually, it is essential to know which roles the initiative wants to fulfill. Only those roles will need municipal support. Now, it is clear which roles the initiative wants to fulfill, a final question is relevant for the municipality perspective, which is as follows:

What are we currently doing?

It is important to know what the municipality is already doing according to support. Some roles are maybe supported and will not need anymore. When this is clear. The two perspective questions lead to the following answer:

These roles are relevant…

The answers of the first four sub-question together form the answer to the first main question. The answer to the first main question is as follows:

We will support the following roles...

11.1.1.5 What support is needed?

The fifth sub-question is the first sub-question of the second main question focused on what support will be provided. The fifth sub-question is about what support is needed. All three perspectives have relevant questions for this sub-question. The question relevant for the initiative perspective is as follows:

What support does the initiative want?

The initiative perspective question is about what support the initiative wants. This question is only applied to the roles that came out of the first main question and the municipality agreed on to support. When it is clear which support the initiative wants, it could be that there are interesting activities for which the initiative did not ask for municipal support. The following question is relevant for the Energy Transition perspective:

What do we want to encourage?

If it is clear what support the initiative and which support is interesting to provide to encourage the initiative according to the Energy Transition goals, it results in the necessary support. This brings the following answer:

This support is necessary...

11.1.1.6 To what extent do we want to provide that support?

The sixth sub-question is about further defining what specific support needs to be provided by the municipality to the initiative. The previous sub-question made clear which support is necessary. The following questions representing the three perspectives provide insights into what extent the support should be provided. The first question is relevant for the initiative perspective and is as follows:

What are the specific needs of the initiative in terms of support?

By the question above, the needs of the initiative in terms of support is identified in more detail. It is besides clear for which roles the initiative wants municipal support, but also what this support enholds. The following three questions are relevant for the municipality perspective:

Who provides in any case S support.

Which roles can we support well?

What is the easiest/fastest to support?

The municipality is able to provide support in different intensities. These intensities can be translated to small support, medium and large. Small municipal support will always be provided to the agreed roles. Furthermore, the intensity can also have to do with how well the municipality can support each role. Also, the type of support which is easiest and fastest also is of relevance. When looking at the Energy Transition perspective the following questions are relevant:

Which roles have a lot of potential according to the initiative?

How much impact does the initiative make per role?

Are there plans for a participation trajectory in the neighborhood?

The first question is about the potential of the roles according to the initiative. The initiative knows what is going on in the neighborhood and what is needed. Further, they know how much developed the fulfillment of each role is by the initiative. The second question is about the impact of the initiative per role. This impact depends on many variables as explained in Chapter 10. For example, a clear frame for the Energy Transition in that neighborhood allows the initiative to have more impact. The third question is about the plans for a participation trajectory. When there is such a trajectory the initiative can be more important and the choice could be made for more municipal support for the initiative. Together all the questions of each perspective come to the following answer:

We want to provide the support to this extent...

11.1.1.7 In what order do we want to offer the support?

The seventh sub-question is the last sub-question of the second main question. In the fifth and sixth sub-question it became clear what the municipal support should contain and to what extent the municipality will deliver that support. This last question is about the order the support is provided. This order depends on a question for each of the three perspectives. The question relevant for the initiative perspective is as follows:

What are the initiative's next plans in fulfilling the roles?

To get an idea on which support is more important to provide sooner than other support, it is necessary to know what the next plans of the initiative are. It may be useful to provide some support sooner because of these activities. The municipality's perspective results in the following question about the order:

What is the municipality currently working on? Which activities of the initiative are best suited to this?

The municipality is always working on the Energy Transition and every time busy with something else. This can be city broad or just specifically for this neighborhood. Nevertheless, the activities of the municipality could influence what support should be given first. When the activity of the initiative matches the municipal agenda more the could be given more priority. The following question is relevant for the Energy Transition perspective:

What is most important in the current energy transition timeframe?

This question concerns the timeframe of the Energy Transition as a total. The Energy Transition will go through different phases in the coming years dependent on science, legislation, social development or other things. Some activities of the initiative and therefore some support may be more matching with the current developments concerning the Energy Transition. This support should be given priority. The three questions representing the three perspectives result in the following answer:

We would like to provide the support in this order...

The order of the support is the last piece to answer the second main question. The order together with the specific content and size of the support results is the following answer:

We want to offer this support...

11.1.1.8 What support can we offer?

After knowing about the roles to support and what support to offer, it is time to look into how to support. The eighth sub-question is the first sub-question of the third main question. This sub-question is only dependent on the municipality perspective and is about what support can be offered. The questions relevant to the municipality perspective are the following:

What is currently feasible in terms of skills?

What is currently feasible in terms of sources?

What is currently feasible in terms of tasks and capacity?

Can our network assist?

The first three questions refer back to the different categories of municipal support of which insights were gathered. The municipal support agreed on to provide, should also be possible to provide. If this is not possible, the fourth question is interesting. It could be that the support cannot be provided by the municipality but by other stakeholders in their network. The four questions together provide insights on what support can be provided at the moment and results in the following answer:

We can now offer this support...

11.1.1.9 What support can we not offer but must be provided?

The ninth sub-question focused on the support that cannot be offered by the municipality or its network. Sometimes it could be the case that the municipality is not able to provide all the support that it wants to. In that case some questions need to be considered for each of the three perspectives. For the initiative perspective the following questions is relevant:

Without what support the initiative will not progress?

This question gives insights into how needed the municipal support is for the initiative. The support could be something critical for continuing their project or other activities. This could be a reason why the municipality should invest or make adjustments so the support could be delivered yet. The municipality perspective contains the following relevant question:

Is the investment possible?

Even when it might be necessary to provide the support to keep the initiative going, it needs to be possible for the municipality to make the investment. This is time dependent. When it is possible to do the investment, a final question for the Energy Transition perspective needs to be asked. The questions is as follows:

What missing support is worth an investment?

It should be considered if the investment is worth it or that it is better spent on something else within the subject of the Energy Transition. However, it could also be the other way around. Maybe the support is not crucial for the initiative but very much in line with stimulating activities that fit the current Energy Transition timeframe.

In that case the investment could also be worth it. Together the questions of these perspectives lead to the following answer:

We are going to invest in this support...

11.1.1.10 How are we going to provide the support?

The tenth sub-question is the last sub-question in total. This question focuses on who the support will provide. Therefore, the municipality perspective is the only perspective relevant. The questions are as follows:

Who can carry it out?

Who directs this?

The first question focuses on who could provide the support, so who will carry it out. The second question is more about who is in the lead, is directing the support and therefore takes the responsibility that the support will be provided. These two questions bring the following answer:

The support is arranged and carried out by this person...

When all sub-questions are answered. We know which roles to support, what kind of support needs to be provided in which order, if the municipality can do this and who it should do. All these answers combined bring the final answers which form the strategy and action repertoire for stimulating the local energy initiatives. The answer is as follows:

This is what we are going to do...

11.1.2 Extra informational input

Besides the overview poster and the worksheets, the final concepts include access to additional information. This additional information is the content of each of the five roles and the basic role. This information can be found in Chapter 9. Furthermore, the additional information contains a suggestion for the municipal support defined out of the results of the two workshops. This information can also be found in Chapter 9. The total package of this additional information is available for the client. It is essential to be used as input and starting point when creating the strategy and action repertoire through the final concept.

11.1.3 The overview poster

The client had mentioned that the preference for the first concept was mainly based on the overview functionality. Therefore, the overview poster is designed so that it would provide as much overview as possible. The squares could be somewhat confusing. Besides, for each main question, a new square was needed. This new format overview poster provides an overview of each main question in one view. To provide even more overview and logic, the spiral reading direction is changed to a normal ready direction, namely from left to right and from top to bottom. This reading direction is much more natural than the spiral direction. The overview poster is shown in Figure 70.

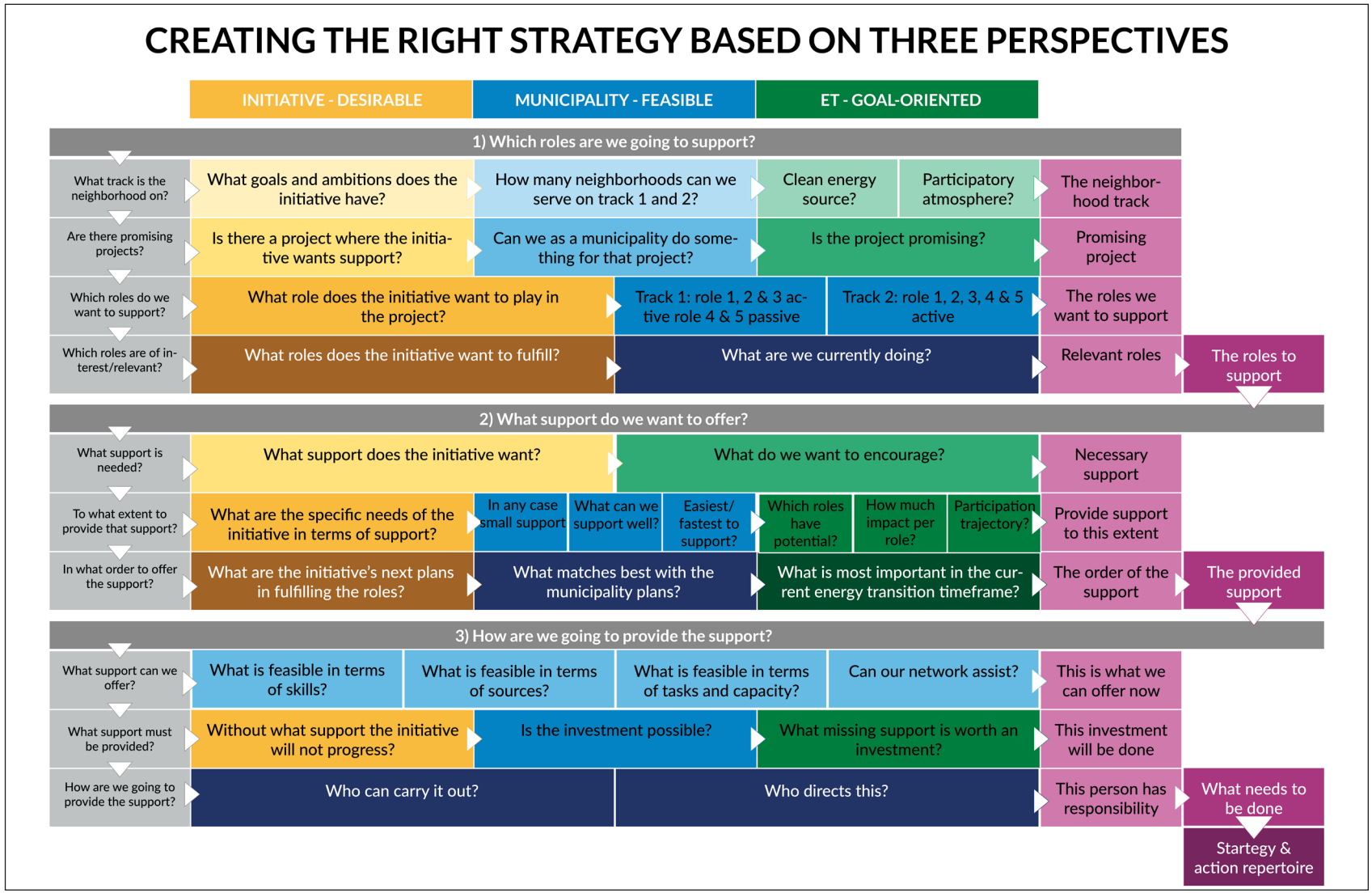


Figure 70: The overview poster as part of the final concept.

11.1.4 The worksheets

Besides the overview poster, the final concept contains multiple worksheets. For each of the sub-questions, its worksheet is created. This worksheet is meant to go into more detail and to be used to document reasoning, conclusions, and the final strategy and action repertoire. The worksheets must be easy to use by everybody. Therefore, the worksheets are made as interactive pdfs. This means that there are text boxes and checkboxes which everybody on each computer can use.

The first sheet concerns information about the neighborhood and local energy initiative as shown in Figure 71. The green and blue boxes need to be filled in by the municipality. These boxes are about information about the neighborhood, the responsible person within the Preparation & Planning team, and the municipal vision about the Energy Transition in the applicable neighborhood. Consequently, the yellow boxes need to be filled in by the initiative. These boxes involve the applicable initiative and the contact person(s) and the initiative's vision on the Energy Transition and specifically citizen participation in the neighborhood.

The second sheet is the table of content as shown in Figure 72. On this sheet, an overview of the main questions and their sub-questions can be found. The user can click on each sub-questions, which will lead them to that specific sub-question worksheet. It is also possible to scroll through the document. Further, each of the main questions has a checkbox on the right side. With this checkbox, the user can show which main question is done.

After the first two sheets, the ten sub-question worksheets follow. An example of such a worksheet is shown in Figure 73. At the top, the main question and its sub-questions are shown. The sub-question applicable to that specific worksheet is darkened. Below the sub-questions, the three perspectives are placed. Each perspective has its questions on the left side and, besides that, an interactive text box. In these interactive text boxes, the answers can be written. Above each of these text boxes, a suggestion could be placed that indicates the type of answer. On the bottom of the page is the outcome box. Within this box, the answer to the sub-question can be written, which is a combination of the answers to the questions of the three perspectives. On the right side of each of the perspectives and the outcome box are checkboxes. With these checkboxes, the user can show which sections are done.

At last, there are the three outcome worksheets and one final outcome worksheet. The first outcome worksheet is shown in Figures 74 and 75, answering the first main question. The outcome of each of the sub-questions is connected to the specific sub-questions worksheet. Therefore, the answers will be filled in automatically, and the same goes for the checkboxes on the right side of each outcome section. The dark purple outcome is the outcome of the main question. This is a combination of the sub-question outcomes and needs to be filled in by the user. Then finally, there is the final outcome worksheet, which is shown in Figure 76. This worksheet is also connected to the previous dark purple boxes of the three outcome sheets. Therefore, this worksheet is also filled in automatically when the user fills in the dark purple boxes in the three outcome worksheet.

Figure 71: The introduction worksheet as part of the final concept.

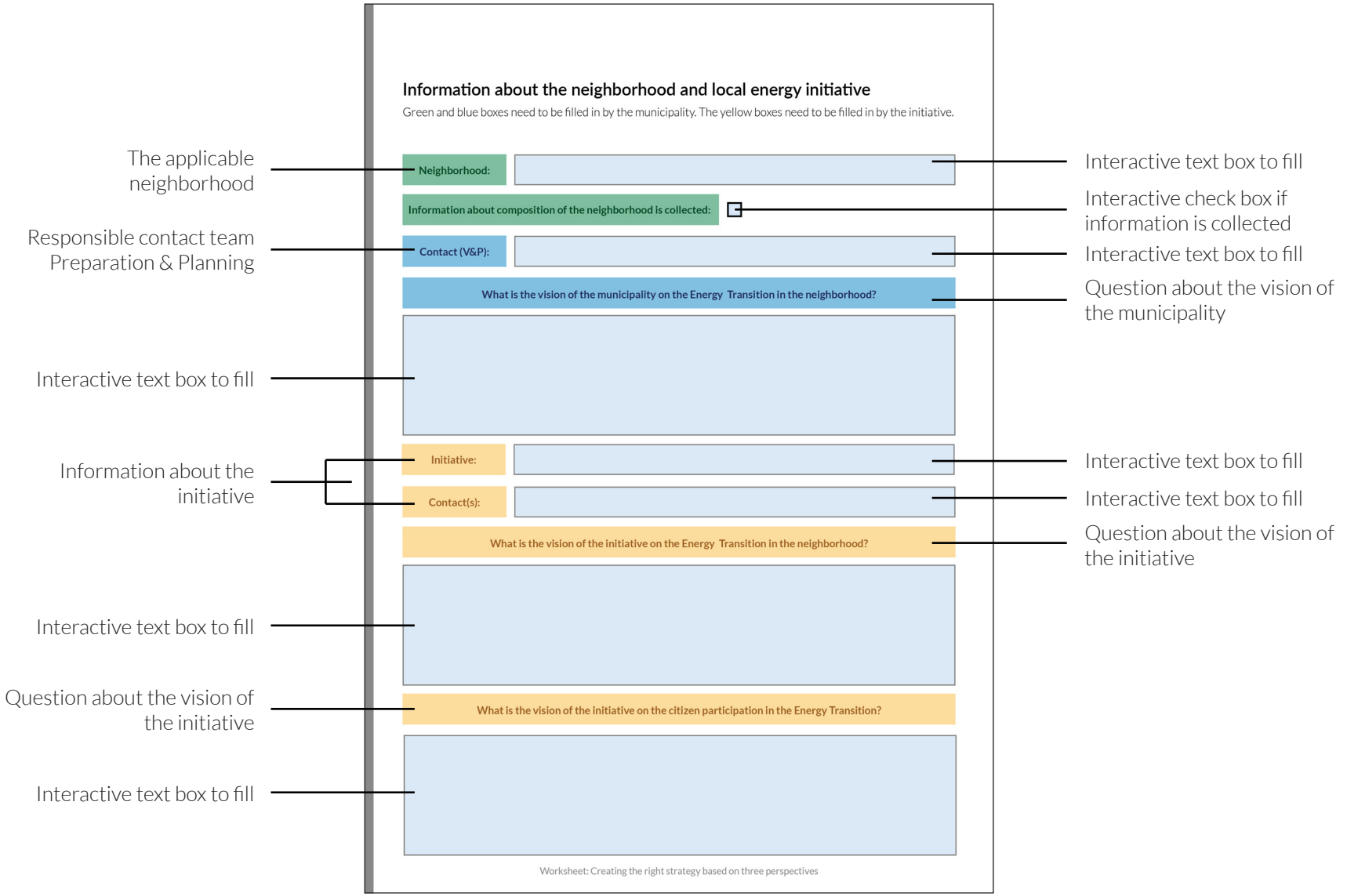


Figure 72: The table of content worksheet as part of the final concept.

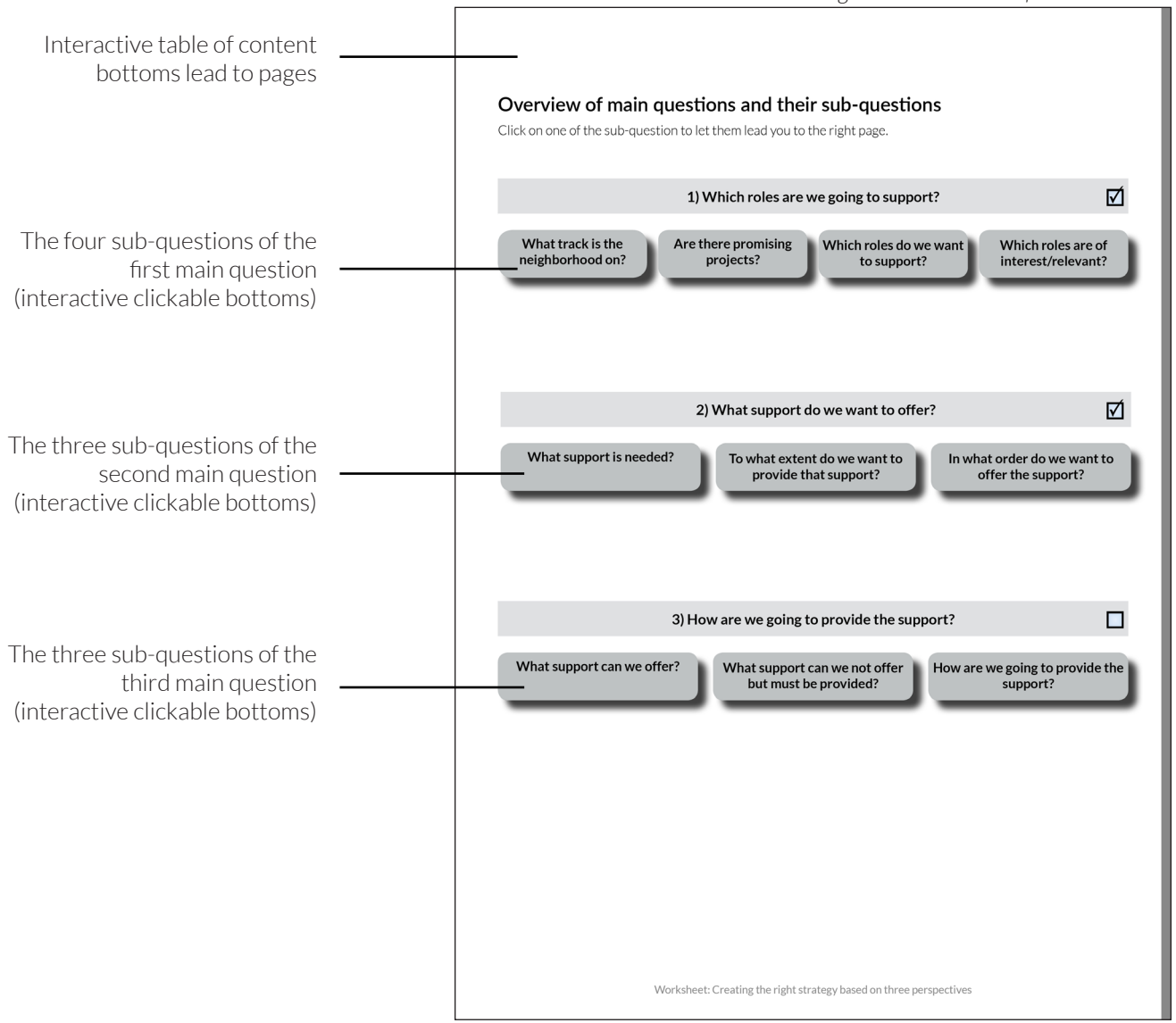
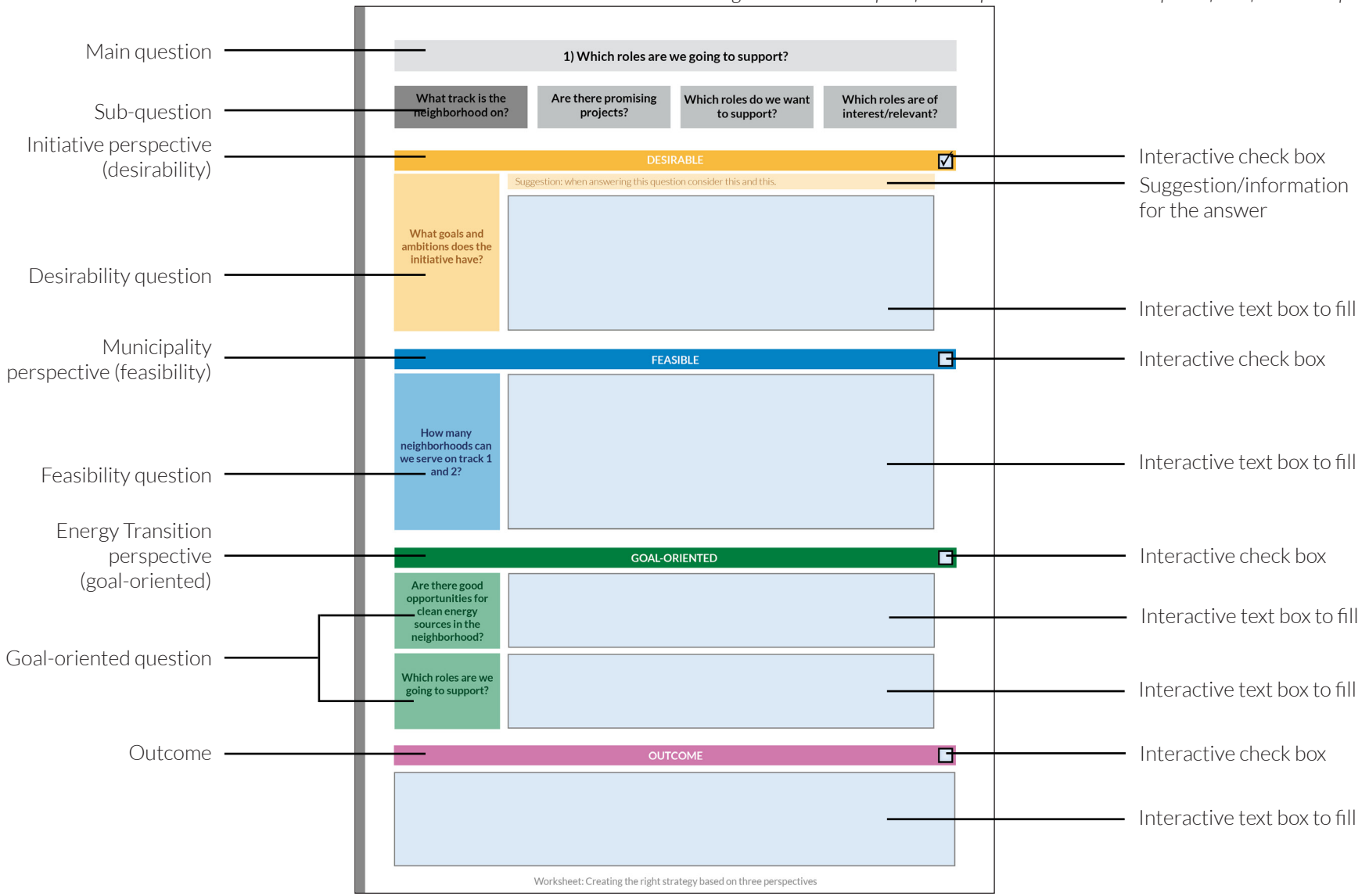
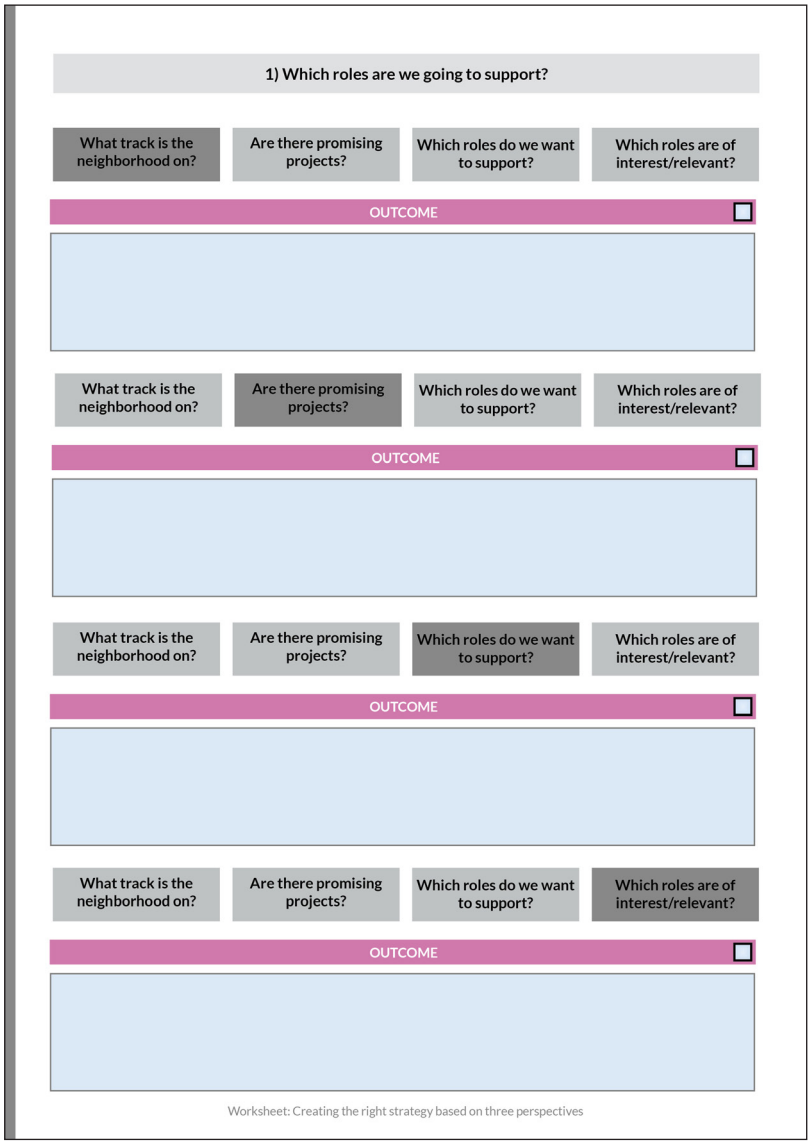
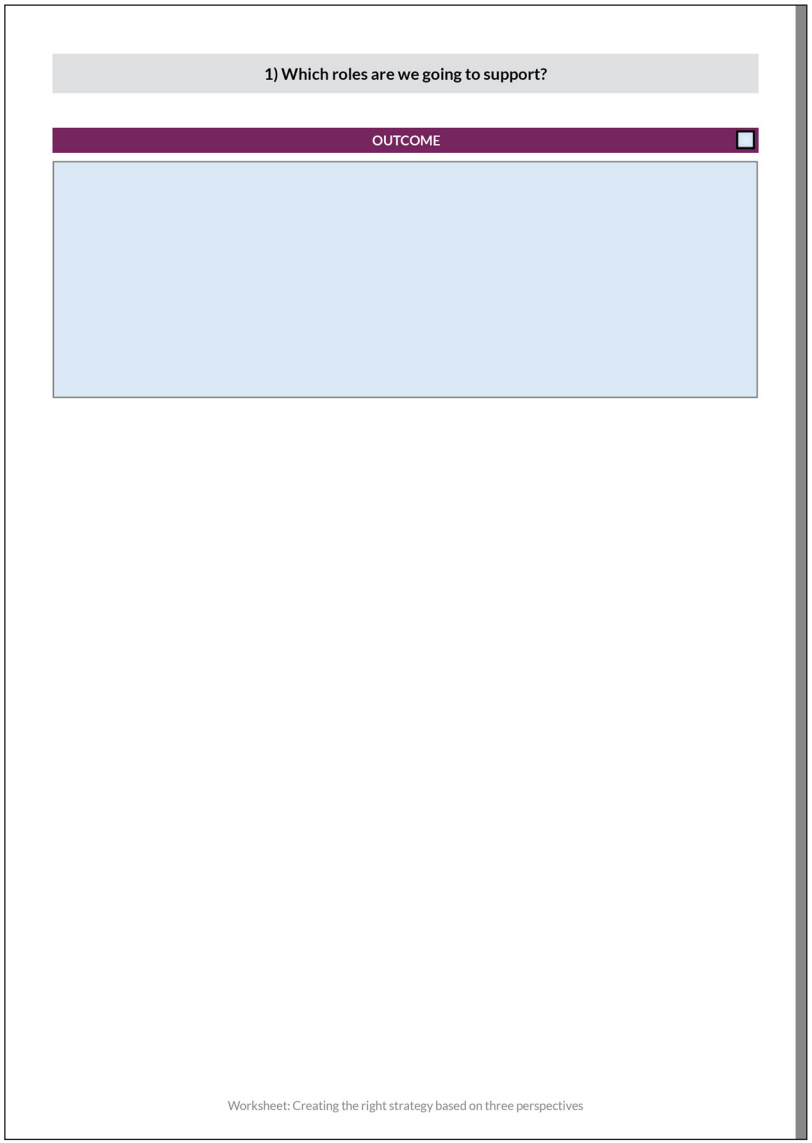


Figure 73: An example of a sub-question worksheet as part of the final concept.

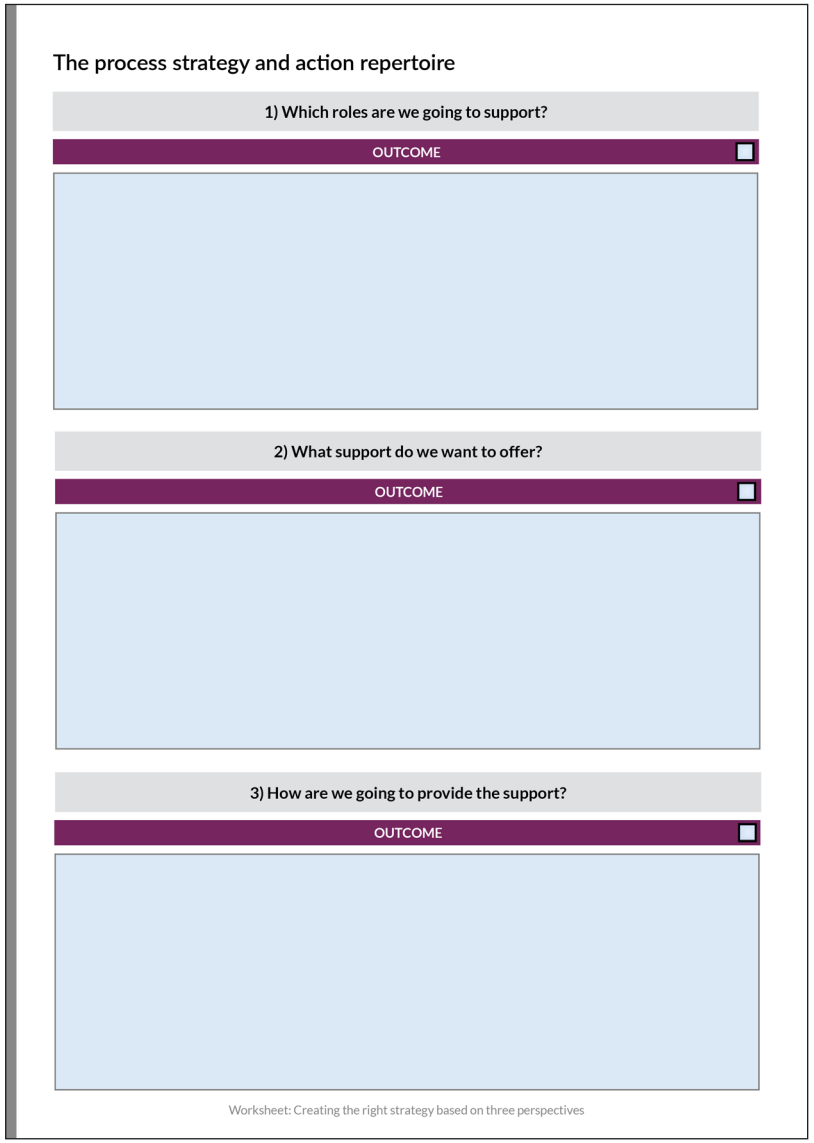


Figures 74 and 75: An example of an outcome worksheet as part of the final concept.





Figures 76: The final outcome worksheet as part of the final concept.



11.2 DISCUSSION

11.2.1 Major findings

The results indicate that each of the five initiative's roles has other needs according to municipal support. Furthermore, when validating the roles with the local energy initiatives and civil servants, a basic role was missing, and the third and fifth roles were not completely correct. The basic role is mainly about the local energy initiatives as a group of motivated people that want to make a long-term commitment to the Energy Transition subject in their neighborhood. These people also form an example for other citizens in the neighborhood. As defined in the second phase of this research, the third role was focused on the initiative advising the municipality with neighborhood-specific information and the promotion and translation of information from the municipality about the Energy Transition towards the citizens. After the validation, the focus lies more on collaboration. The municipality, as well as the initiative, can advise and promote each other. Therefore, this role is more of a two-way street than it first seemed. The third role is renamed 'Collaboration with the municipality.' The fifth role, as defined in the second phase of this research, was citizen ownership. Citizen ownership concerns citizens owning a part of the energy system. After the validation, the addition was made to the execution of this part of the energy system. Therefore, the fifth role is about the execution and citizen ownership of a part of the energy system and is renamed 'Execution and ownership'.

During the validation session, also new insights were gathered concerning detailed information about the five specific roles and needs concerning municipal support per role. However, this more detailed information is useful input. It did not provide any clarification concerning the process strategy and action repertoire for the municipality to support the initiatives. Because the municipality cannot provide all the support at once and for everybody, prioritizing the municipal support is needed. The level of citizen participation stimulated by the roles and the municipal experience of supporting the initiatives cannot be used to prioritize. The core challenge when providing municipal support is prioritizing and choosing why and when to provide certain support as a municipality.

A final concept is developed to overcome the core challenge. This concept helps to make the participation team consider three perspectives and, in this way, prioritize and create a strategy and action repertoire themselves. The three perspectives to consider are:

1. The desirability, which has to do with the wishes and needs of the local energy initiatives.
2. The feasibility, which has to do with what the municipality can do.
3. The goal-orientedness has to do with how the municipal support contributes to the Energy Transition goals.

The concept guides the user through each of the three perspectives using three main questions and ten sub-questions. The questions and three perspectives are presented in an overview in poster size and by multiple interactive worksheets. Everyone can fill in the interactive worksheet on every computer since these are interactive pdfs. When all worksheets have been completed, a strategy is created, including an action repertoire, and the participation team knows what needs to be done by who.

11.2.2 Implications

The data contributes a clearer understanding of each of the five roles of the initiative and the matching municipal support. According to municipal support, each role has its own needs and wishes, which is in line with the need for customization described in the second phase of this research. However, the client cannot use the data directly to improve the undefined and inconsistent relationship between the municipality and the local energy initiatives. The final concept uses the data as input and helps overcome the undefined and inconsistent relationship. The client can use the final concept to develop a strategy and action repertoire for the municipal support. This will define the relationship and makes it consistent. With this relationship, the municipality can benefit from a local energy initiative when they want to scale citizen participation in the Energy Transition in a particular neighborhood.

Furthermore, the final concept provides a way to prioritize municipal support. This is necessary because the municipality is not able to provide all the support at the same time. The prioritization is made possible by the integration of thinking in three perspectives, as done in the Design Thinking approach, in the concept. The goals, ambitions, context, and circumstances for each individual initiative can be considered through these three perspectives. In this way, it is possible to use standardized roles and a standardized way to create a strategy and action repertoire customized for that specific initiative. Therefore, the final concept is an instrument to deliver strategic customization.

11.2.3 Limitations

The generalizability of the results is limited by the number of workshops and the number of participants in these workshops. However, there is chosen for a mixed group of local energy initiatives as was applied in the interviews in the second phase of the research. Considering the civil servants involved in the second workshop, each of the teams of the Energy Transition program was represented by at least two persons. Therefore, the group was a mixture of civil servants, each with a different connection to the local energy initiatives. Furthermore, both workshops were held online via MS Teams, which could have decreased the interaction between the participants and influenced the results' richness. Since the COVID-19 crisis, the choice for an offline workshop was not possible.

Furthermore, the outcome of the final concept is limited by the timeframe of this research. Also, one of the two persons representing the participation team, the client of this research, got a burn-out at some point. This person was the most experienced one of the two and could not provide any input at the end of this project. Consequently, there was no opportunity to test the final concept in a real-life case and come to a strategy and action repertoire with an initiative for a neighborhood. Therefore, it could be possible that some adjustments need to be made after using it for the first time, but the final concept makes these adjustments possible. Nevertheless, the final concept was developed through multiple prototyping sessions with the client, and the input of the local energy initiatives from the first workshop was implemented. Furthermore, the sub-questions and perspective questions can be changed or added to the final concept. It may be that the concept needs adjustment over time anyway. These adjustments could be caused by, for example, political changes, legislative changes, or technological breakthroughs.

The limitations section of the second phase of this research (see Chapter 7) mentioned that the five standardized roles know limitations since each initiative is unique. Two initiatives fulfilling the same set of roles can still be different and therefore need different support. The same goes up for the implementation of the five roles in the final concept. However, in the second phase, it was also mentioned that the initiatives' goals, ambitions, context, and circumstances need to be considered to overcome this limitation. Therefore, all of these elements are implemented in the final concept to add a customized approach.

11.3 CONCLUSION

This research aimed to identify how the municipality can collaborate with local energy initiatives to stimulate citizens to participate in the Energy Transition. Hereto, the following research question has been formulated:

In what ways can the municipality collaborate with local energy initiatives to stimulate citizen participation in the Energy Transition?

The design goal was to design a process strategy and action repertoire for the participation team of the Energy Transition program of The Hague to scale citizen participation through local energy initiatives. The second phase concluded that the current relationship between the municipality and the local energy initiatives is undefined and inconsistent. Out of the results of the third phase, it can be concluded that the municipality needs to collaborate with the local energy initiatives by stimulating the initiatives for specific roles with particular support at a certain time. Therefore, it is a must find a way to prioritize the municipal support and collaboration. This prioritizing can be seen as the core challenge of solving the undefined and inconsistent relationship between the municipality and the local energy initiatives. Knowledge about the five roles and the matching municipal support can be used as input. The roles, type of support, and timing depend on three perspectives. The three perspectives are developed from the Design Thinking approach and help to cover all that needs to be considered when prioritizing municipal support. The three perspectives cover the desirability of the initiatives, the feasibility of the municipality, and the goal-orientedness of the Energy Transition. Together these three perspectives provide insights into which roles need to be supported, what type of support needs to be delivered, and at what time.

A final concept is developed to provide the municipality with a way to prioritize the municipal support and, in this way, collaborate with the local energy initiatives to scale citizen participation. The three perspectives are integrated into the concept. The concept guides the user by using three main questions and ten sub-questions. For each of the sub-questions, the three perspectives are considered, and perspective questions are asked. In the end, the final concept helps the participation team of the municipality to create a strategy and action repertoire to scale citizen participation through the local energy initiatives for each neighborhood.

However, the final concept was not tested in a real-life case to create a strategy with an initiative for a specific neighborhood. Nevertheless, the concept was developed by multiple workshops and prototyping sessions with initiatives, civil servants, and the client. Furthermore, the final concept is modular. To clarify, the final concept can be changed, or adjustments

can be made based on real-life cases, political changes, legislative changes, technological breakthroughs, or other reasons. This modularity is based on the use of several building blocks for the final concepts. These building blocks are the three main questions, the sub-questions and the perspectives questions. All three of these types of questions can be altered or replaced to suite the current situation regarding the local energy initiatives in the Energy Transition in The Hague. The final recommendations are presented in the last chapter of this thesis, Chapter 12.

OUTRO

In the Outro, all comes together. This phase contains a final chapter with a discussion, a conclusion and recommendations concerning the research question and therefore covering the previous three phases. After that, the personal reflection is presented. At last, this Outro contains the references.

12. FINAL DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This chapter includes the final discussion, conclusion and recommendations. The discussion and conclusion provide an answer to the overall research question and therefore is a combination of all three phases. The answer concerns a way for the municipality to stimulate citizen participation in the Energy transition through the local energy initiatives in The Hague. Within the discussion there is explicitly attention for the three phases, their connection and the use of these phases. The conclusion also contains the contribution of this research to the existing literature. Finally, the recommendations are presented for the local energy initiatives, the municipality and for further research and future research directions.

12.1 DISCUSSION

12.1.1 Major findings

The results of the preparatory research in the first phase indicate that the stakeholder ecosystem of the local energy initiatives is complex. This complexity has to do with the large number of stakeholders involved and the differentiation between each stakeholder's interests. Furthermore, the role division between the stakeholders is not clear. In addition, the municipality plays a significant role in the ecosystem since it is connected to almost all stakeholders. This relationship between the municipality and the local energy initiatives is also not clear. Lastly, it came forward that each initiative is unique, dependent on its goals, ambition, context, and circumstances.

When looking at the way the local energy initiative's functions, it can be seen that they innovate in social ways rather than technical ways. Therefore, the local energy initiatives are social innovation, and the Transformative Social Innovation theory is a suitable way to research the initiatives in a transition context.

The theoretical concepts discovered within this first phase are used for the second and third phase of this research. The insights regarding the stakeholder ecosystem are considered during the research of the second phase and the design process of the third phase. These insights were important for a better understanding of local energy initiatives, general view on their position in the ecosystem, their issues, and the relationship with the municipality.

The results of the second phase indicate that the local energy initiatives in The Hague innovate in each of the ways, namely in new ways of doing, framing, knowing, and organizing. The activities and functions of the initiatives and their ways of innovating can be divided into fulfilling one basic role and five specific roles. Each initiative fulfills its own set of roles depending on its goals and ambitions. From the insights gathered out of the interviews of the second phase and two validation sessions in the third phase, the following basic role and five specific roles were defined:

B) Long-term commitment: The formation of a group of interested people who are long-term committed to the Energy Transition theme in their neighborhood.

1. Awareness creation: Introducing citizens to and inspiring them about the Energy Transition.
2. Action perspective creation: Activating citizens to become

more sustainable or offering the opportunity to participate in a project.
3. Partnership with the municipality: Provide each other with (neighborhood-specific) information about projects and the Energy Transition to support and promote each other.
4. Voice at the table: Take a voice at the table in the discussion about future Energy Transition solutions in the neighborhood.
5. Execution and ownership: The implementation and ownership by the citizens of a part of the energy system (generation, distribution, infrastructure).

Furthemore, the second phase looked into the potential of the contribution of the local energy initiatives. The results indicate that the full potential is not achieved yet. There are three main reasons for this:

1. The initiatives, municipality, and other stakeholders have the same goal but not the same vision. Therefore, there is no shared vision which makes the network disjoined and nonoptimal.
2. The relationship between the municipality and the local energy initiatives is undefined and inconsistent. According to the local energy initiatives, the municipal has no clear vision about the Energy Transition and citizen participation. In addition, the municipal support differs per civil servant and initiative because of the lack of a strategy. The local energy initiatives feel misinterpreted by the municipality according to the roles they fulfill.
3. Besides the missing shared vision and undefined and inconsistent relationship with the municipality, there are other more minor challenges interfering with the potential of the initiatives like reaching people in the neighborhood, keeping the initiative alive and going, getting organized professionally, and being as representative as possible.

Nevertheless, the local energy initiatives and institutions are influencing each other. Furthermore, the initiatives have the ambition to change the current energy system and therefore create Institutional Change. The initiatives want to let the citizens have an active role in as well the discussion about the Energy Transition as in the future energy system itself.

The third phase of this research builds further on the insights of the second phase. One could state the the relation between the second and third phase works as research for design. The research of the second phase is used as input for the design process of the third phase. The third phase uses the five defined roles as input. Furthermore, it focuses on the second reason for not achieving the full potential of the contribution of the local energy initiatives. This reason concerns this undefined and inconsistent relationship between the local energy initiatives and the municipality. The results of the second phase on the five different roles of the initiative were validated and enriched in the third phase based on both the initiatives' perspective and the civil servants' perspective. The possibility to do this shows the value of the use of multiple phases and the opportunities of the integration of the phases. Furthermore, the design process of the third phase could be started with many in-depth insights which allows to develop

a more suitable and useful final concept solving the research problem.

The results of the third phase indicate that each of the five roles has its wishes and needs concerning municipal support. These needs and wishes are identified during the two workshops. The municipality is not able to provide all support to each initiative and at the same time. Therefore, the municipality needs to prioritize which support to provide, to which initiative, and at what moment.

There was looked into two ways to prioritize the municipal support. In the first place, it was looked into the different levels of citizen participation the roles are stimulating among the citizens in the neighborhood. Secondly, the experience of civil servants concerning the importance, municipal responsibility, complexity, and time consumption of the municipal support was researched. Both ways were not suitable to prioritize the municipal support. The complexity of the prioritization has mainly to the with the consideration of multiple perspectives. The three perspectives of the Design Thinking approach seemed helpful to consider all perspectives. Therefore, these three perspectives were implemented in a final concept. The uniqueness and timeframe dependency make it impossible to create one process strategy and action repertoire. The client can use the final concept to create a strategy and action repertoire for each initiative and neighborhood. There are three main questions defined to be asked when prioritizing the municipal support, namely:

1. What roles are we going to support?
2. What support are we going to deliver?
3. How are we going to provide this support?

The three main questions are accompanied by, in total, ten sub-questions, and for each of the sub-questions, the three perspectives are considered. The concept exists out of two parts. The first part contains a poster that provides an overview of the main questions, sub-questions, and perspectives questions. The second part contains multiple worksheets (interactive pdfs) to be filled in, resulting in a strategy and action repertoire. Together these parts, the final concept, seem useful to guide the user through the three main questions to create a strategy and action repertoire per neighborhood.

12.1.2 Implications

The data contributes to a better understanding of the local energy initiatives in The Hague. There are insights about the different roles they fulfill and how the municipality can support these roles. The insights about municipal support contribute to the clarification of the more specific role of the municipality. Furthermore, the results showed that the full potential of the local energy initiatives is not reached yet, why this is the case, and suggests what needs to be done to optimize their contribution. One of the reasons is the undefined and inconsistent relationship between the local energy initiatives and the municipality.

Eventually, the insights led to discovering the core challenge of this undefined and inconsistent relationship between the municipality and the local energy initiatives. The core challenge is to find a way to prioritize municipal support when considering multiple perspectives, namely initiatives, municipality and Energy Transition perspectives. The discovery of the core challenge has led to the development of the final concept. The final concept can help the client create a strategy and action repertoire for municipal

support per initiative and neighborhood. The strategy will improve and clarify the relationship between the municipality and the local energy initiatives and, therefore, the potential of the initiatives. Furthermore, in this way the municipality can consistently collaborate with the local energy initiatives to scale citizen participation in the Energy Transition.

12.1.3 The relevance and contribution to existing literature

The relevance and contribution of this research to existing literature is multi-faceted. In the first place, this research provide specific knowledgde about the potential contribution to the Energy Transition of local energy initiativies in The Hague. The results show that local energy initiatives in The Hague have a great potential contribution to the Energy Transition. Multiple initiatives operate as energy cooperatives or sometimes multiple cooperative based on one initiative and in this way generate and distribute clean energy within their neighborhood. Furthermore, the local energy initiatives stimulate awareness of the Energy Transition and the increase of energy preservation. This great potential is in line with current research that states that local energy initiatives can be a promising solution for the Energy Transition (Bauwens & Defourny, 2017; Koirala et al. 2018; Wagemans et al., 2019). However, it was not researched before in the context of The Hague. A side note to this is that the initiatives can only be part of the solution since not every neighborhood has an active local energy initiative. Besides, the initiatives are not representative for the citizens and therefore a participation trajectory targeting the whole neighborhood is always a must. Furtermore,Fourthly, the main barriers for the potential of the local energy initiatives in The Hague are identified. Current research states that local energy initiatives need to be handled is a sensitive matter. The initiatives can become vulnerable because of their limited resources and unbalanced exposure and demands (Frantzeskaki et al., 2016a). Besides, the local energy initiatives benefit from a reliable and consistent government (Rotmans and Linden, 2014). The results of this research are in line with these statements. One of the main barriers towards the potential of the initiatives is their undefined and inconsistent relationship with the municipality of The Hague. Other challenges are about keeping the initiatives going, keep volunteer enthusiastic and reaching citizens in the neighborhood. Furthermore, multiple initiatives complain about the lack of vision on the Energy transition, the lack of vision on citizen participation and the lack of frames within which can be participated.

Secondly, the insights of this research provide five specific roles which are fulfilled by the local energy initiatives in The Hague. These five specific roles are a helpful starting point for the better understanding of the initiatives, their role and position, and to find ways to collaborate with the initiatives as municipality or other stakeholder. It also provides the initiatives themselves with a way to clearly express and explain their activities, goals and ambitions. Besides, the five roles can inspire initiatives to take on more roles and give them the knowledge on what these roles are about, their challenges and what support they need. However, these five roles are based on local energy initiatives within the context of The Hague. Therefore, it is not a given that these five roles directly can be applied to local energy initiatives in another context and be of the same use as within the context of The Hague. Nevertheless, the five roles can be

a starting point and helping hand for others when researching local energy initiatives.

Thirdly, several studies return to the question about approaches, interventions, policies, methods, and instruments involved with local energy initiatives. It is not clear yet, which ones are effective, have an impact, and may lead to success and the stimulation of citizen participation (Bakker et al., 2012; Bauwens, 2016; Hoppe and de Vries, 2018; Soares da Silva and Horlings, 2019). Within this research a final concept is developed, which can be used to create a strategy and action repertoire for the municipality to collaborate with the local energy initiatives. Therefore, this final concept defines a more specific role the municipality. Moreover, it provides the municipality of a way towards collaborative participation in the public domain, also referred to as 'Participatory Domain' by Mulder (2014) or as 'Societal Space' as explained within Chapter 1. This research uses a specific approach of research for design. The local energy initiatives were first research based on the Transformative Social Innovation framework and the insights of this research were used as input for the design process. Within the approach the research question was split up into two resulting in a second phase and a third phase. Because of the split up, the results out of the second phase could directly be validated and enriched in the third phase. Where existing literature mainly focuses on scientific insights, this research provides an approach that translates these scientific results into a practical solution. Therefore, the approach of research seems valuable and effective. It can be of inspiration to others in future studies.

Fourthly, this research makes use of the concepts of the Transformative Social Innovation (TSI) framework of Pel et al. (2020) to develop a research framework for the second phase of this research. This TSI framework was introduced for the first time in 2016 by Haxeltine et al., which means that this framework is relatively new. The framework proved its value when researching the local energy initiatives in the transition context. Therefore, this research can work as stimulance to use the TSI framework when studying local energy initiatives in other contexts. Besides, the developed research framework and results of this research can contribute to the further development of the TSI framework and enrich it.

Lastly, it is definitely not the first time that Design Thinking is used to tackle complex problems related to the Energy Transition. Nevertheless, this research is an example of the usage of the three perspectives of Design Thinking, namely desirability, feasibility and viability, to come to a strategy or in other words solution, to an Energy Transition related problem within the municipal context. Furthermore, the three perspectives integrated in the final concept will be used by non-designers. These perspectives are integrated in such a way that everybody within the municipality and also the members of local energy initiatives can understand the final concept and apply the Design Thinking perspectives. Therefore, this research contributes to the existing literature by providing an example of the practical implementation of the three perspectives. Furthermore, it proves that it can be interesting to look into how these three perspectives can be useful within the search for solutions for other Energy Transition related problems within the municipal context.

12.1.4 Limitations

As described in the previous limitation sections (see 7.1.3 and 11.2.3) the generizability of the results of this research

is limited by the number of involved local energy initiatives. In total, there are 11 different local energy initiatives involved in this research, which does not cover all the initiatives in The Hague. Furthermore, there lies a danger in the search for a standardized solution for a problem which asks for customization. To explain, citizen participation and citizen initiatives take place in local contexts which can differ much among each other. Variables within these local contexts can be the size of a neighborhood, the type of houses, the wealth level, the health level, the mobility possibilities and other things. Within this research there was a search into the similarities between the local contexts or actually the similarities between the operating local energy initiatives. Out of these similarities the basic role and five specific roles were defined. Nevertheless, it stays essential to mention that these basic role, five specific roles and other insights regarding local energy initiatives of this research are the starting point for a strategy and should not replace the conversation with the local energy initiatives. These conversations are meant to include the variables of the local context and the differences in activities, goals and ambitions of the initiatives.

When looking for a way to research local energy initiatives in a transition context, two different approaches were examined, namely the Multilevel Perspective and the Transformative Social Innovation framework. The Transformative Social Innovation framework was found to be the most relevant one for the purposes of the research. However, other theoretical research frameworks like Strategic Niche Management and Grassroots Innovations were not considered. It could be that one of these two frameworks seemed more useful and could have brought more meaningful results. Furthermore, the Transformative Social Innovation framework can be seen as more of a conceptual framework and therefore it leads to uncertainties regarding what these four relations should be like to establish actual Transformative Change.

The research also knows limitations regarding the use of the three research phases. The separate three phases created a tightly framed research, which is quite linear. This could possibly had a negative effect on the fruitful cross pollination between the phases. If the three phases were conducted in a more mixed parallel way instead of linear, it could have let to more in-depth results. In addition, the logistics of this tight frame were sometimes creating more complexity. For example, this research does not have an overall research approach. Instead there are two Intermezzos added to explain both the approaches for the second phase and the third phase. However, the use of three diamonds with its convergent and divergent movements tried to provide a clear connection between the phases and to make the sequence of the phases logical and useful. The linear approach also gave the opportunity to gain insights on the context and local energy initiatives themselves in the first and second phase and then validate these insights in the third phase.

Lastly, the research is mainly focused on the perspective of the local energy initiatives. Especially, since the results of the second phase are completely based on interviews with the initiatives. Within the first and third phases the perspective of the civil servants is also considered and the civil servants were involved in the development of the final concept through co-design. Other interesting stakeholders like the large energy companies as Stedin

and Eneco are not actively involved, and therefore this limits this research. Nevertheless, the perspectives of the local energy initiatives and the municipality are essential. When researching the relationship between these two, they are by far the most important and influential. Therewithal, the future energy solutions and systems could possibly exist without the involvement of the large energy companies.

12.2 CONCLUSION

The previous chapters of this research aimed to answer the two research questions of the second and third phase of this research as formulated in Chapter 4. With the use of the research framework a collective case study was conducted to answer the research question of the second phase:

What is the role and position of local energy initiatives contribution to the Energy Transition in The Hague and what is the potential of their contribution?

In total nine local energy initiatives were selected for the collective case study based on location, general goal and diversity. With each initiative an in-dept semi-structured interview is conducted using the research framework, which is based on the theoretical Transformative Social Innovation framework.

The analysis of each case provided a detailed overview of the ways they innovate, the influence of the COVID-19 crisis, how they empower people, their relations within network processes, their relations with institutions and specifically their relation with the municipality. These research elements were further examined to evaluate the role the local energy initiatives fulfil and the potential of their contribution based on the relations within the network processes and the connection to Institutional Change. It can be concluded that the local energy initiatives fulfil five specific roles in the Energy Transition in The Hague. In the third phase of this research the roles were validated and enriched based on both the local energy initiatives' perspective and the civil servants' perspective. These five roles stimulate the citizens to participate in the Energy Transition on different levels of the citizen participation ladder. In the first place, the local energy initiatives create awareness about the Energy Transition among the citizen in their neighborhood. This allows the citizen to participate on the third level 'informing'. Secondly, the initiative provide the citizen with action perspective. They make citizens aware of the feasible intervention they can do themselves or develop collective projects the citizens can join. This second role is on the same level of citizen participation as the first role. Thirdly, the initiatives collaborate with the municipality to advise each other and to promote and support each others projects. The citizen can provide the municipality with advice through the initiative and therefore this role can support the fourth 'consultation', fifth 'placation' or sixth level 'parternship' of citizen participation. Fourthly, the initiative want to have a voice at the table in the discussion about future energy solutions for the neighborhood. In this way they want to provide citizen with a voice and an active spot in the Energy Transition discussion. This stimulates citizens to participate on the sixth level of participation 'partnership'. Lastly, the initiatives also want the citizens to gain an active spot in the future energy system. It does that by executing and/or owning a part of the future energy system together with citizens. Depending on if this is done fully

independent or in collaboration with other parties this allow citizens to participate on the seventh level 'delegated power' or the eighth level 'citizen control'. Each initiative performs its own set of roles which depends on their activities, goals and ambitions. Furthermore, the results on the potential of their contribution conclude that the potential is not fully reached. There are three main reasons why this is not the case. Firstly, the stakeholders have no shared vision only a common goal. Secondly, the relationship between the municipality and the local energy initiatives is undefined and inconsistent. Often the initiatives are misinterpreted by the municipality for their role and possibilities. Lastly, there are several challenges within the initiative regarding keeping the initiative going, how to reach people and about the representativeness of the initiative.

Out of a the design process a final concept is developed and an anwer to research question of the third phase:

In what ways can the municipality collaborate with local energy initiatives to stimulate citizen participation in the Energy Transition?

Two workshops, one with local energy initiatives and one with civil servants, were held. Out of these workshop, it can be concluded that for each of the five roles the initiatives have specific wishes and needs regarding the collaboration with the municipality and municipal support. Therefore, a set of suggested necessary skills, resources, tasks, and capacity per role is defined which can be used as starting point for the matching municipal support per role. Furthermore, the core challenge of the undefined and inconsistent relationship is discovered. This core challenge is about the way to prioritize which municipal support should be delivered when considering multiple perspectives. The client finds it hard to make choices regarding a strategy and action repertoire for the collaboration with the initiatives and the municipal support. In addition, it is hard to explain the choices to others.

Consequently, two prototyping sessions with the client were utilized to develop a final concept to overcome the core challenge. The results of the prototyping sessions conclude that the three perspectives of Design Thinking seem a suitable instrument to include all the relevant perspectives. The three perspectives are the desirability, which represents the local energy initiatives, the feasibility, which represents the municipality, and goal-orientedness, which represents the Energy Transition.

The final concept exists out of three main questions regarding the different roles, type of support and how to provide the support. The user is guided through the three main questions involving each of the three perspectives. The municipality can use the final concept to develop a strategy and action repertoire for each neighborhood.

Overall, this research aimed to identify a way for the municipality to make use of the local energy initiatives in The Hague when trying to increase the citizen involvement in the Energy Transition. Hereto, the following research question has been formulated:

How can the municipality of The Hague increase citizen participation in the Energy Transiton through local energy initiatives?

The municipality needs to collaborate with the local energy initiatives and provide

the initiatives with support in the right way and on the right moment. The municipality can do this by creating a strategy and action repertoire for each neighborhood and local energy initiatives based on the five different roles of the initiatives and through the three Design Thinking perspectives. The strategy and action repertoire include the choice of roles the municipality will support for that neighborhood, the municipal support they will provide, and how they are going to provide this support. The final concept includes a poster and multiple worksheets which guide the user through three main questions and simultaneously through the three perspectives.

The final concept provides a standardized way to create the strategy and action repertoire for the local energy initiative and neighborhood . However, each local energy initiative is unique. Therefore, this standardized way, the input of five defined roles and the matching municipal support as starting point have some limitations. The goals and ambitions of each initiative are integrated in the final concept to overcome these limitations as much as possible. Nevertheless, it essential to state that this uniqueness needs to be in the back of ones mind when creating the strategy and that there always needs to be room for customization.

12.3 RECOMMENDATIONS

This research concludes with a number of recommendations in three categories. In the first place, some recommendations are presented for the municipality of The Hague. The second category contains the recommendations for the local energy initiatives. The last category is about further research and future directions.

12.3.1 For the municipality of The Hague

Based on this research there are several recommendation for the municipality of The Hague according to their role within the Energy Transition and their relationship with the local energy initiatives. Furthermore, the recommendations encourage the move towards collaborative participation in the public domein. In total there is a set of seven recommendations. Firstly, this research reveals that the local energy initiatives miss action from the side of the municipality in the Energy Transition. They state that there is minimal action and mainly talks, memos and meetings. However, they state that it could also be the case that the municipality is not transparent about what they are doing. Therefore, the advice for the municipality is to be more transparent about their activities concerning the Energy Transition and increase the activity.

Secondly, the municipality needs to go all in concerning citizen participation. At this moment, citizen participation is often implemented in a late stadion and seems to be 'participation to participate'. This means it is only implemented because they had to do it. Citizen participation needs to be fully integrated in the entire municipality with everybody on the same page. Otherwise, it has no chance to actually succeed.

Thirdly, the municipality is mainly focusing on the technical side of the Energy Transition. The local energy initiatives experience that this technical side is often to abstract for citizens. When framing the Energy Transition in a more social context, it becomes more comprehensible and applicable for people's personal situation. Therefore, the municipality should be framing the Energy Transition more towards people's living environment and to what changes people will notice in their homes and lives.

Fourthly, the municipality of The Hague and the local energy initiatives need to

create a shared vision since this is needed to reach the full potential of the initiative's contribution. In order to perform create this shared vision, there are two things needed to be developed by the municipality, which is still missing in the interpretation of the initiatives. In the first place, this is a clear vision on the Energy Transition. This vision needs to include the information on city level and neighborhood specific level. Secondly, this is a clear vision on citizen participation in the Energy Transition. This vision can also provide insights in the position of the local energy initiatives and the relation with the participation trajectories which are pointed at the citizens directly. This last vision could even be developed together with the initiatives or other citizens.

Fivetly, the local energy initiatives experience a lack of frame in which can be participated. Without these frame the intiatives and citizens start participating and have the feeling that anything is possible. However, at some point the municipality gets involved and states that not everything is possible and that there are possible already some ideas for that neighborhood. It is essential that the municipality is providing clear frames in which citizens are allowed to participate as soon as possible and as elaborate as possible. This prevents disappointment and conflicts.

Sixthly, the insights of the research and the development of the final concept provide a starting point for the fulfillment of the municipal support for each of the five initiative's roles. In addition, a suggestion was made to divide each set of municipal support per role into small, medium and large support. In this way, the municipality can choose the intensity with which the provide support to the local energy initiatives. However, out of the research it came forward that the municipality wants to be able to provide municipal support to each initiative for at least the first, second and third roles. Therefore, it would be useful to develop a basic set of resources and tools which can be provided to each initiative no matter what.

Lastly, the five roles presented in this research can be useful and the same goes for the final concept which provides the municipality with a strategy and action repertoire for each neighborhood. However, both should be handled with care. One of the important things according to the Energy Transition that came out of this research is the need for customization. In the end each neighborhood and each initiative is unique. Therefore, these differences need to be considered when using the five roles and the final concept. The municipality needs to be aware that each collaboration with an initiative needs a certain involvement of customization.

12.3.2 For the local energy initiatives

This research is mainly focused on the improvement of the role of the municipality. Therefore, there are far less recommendations for the local energy initiatives. Nevertheless, there are two interesting recommendations. In the first place, this research showed that the stakeholder ecosystem is complex and that the network is not optimally used yet. It can be interesting as local energy initiative to see which stakeholders are involved in the overall stakeholder ecosystem and if there are some connection missing for that specific initiative. Furthermore, the initiatives can also learn from other initiatives in how they deal, connected and collaborate with stakeholders within the ecosystem they are not yet connected with. This learning aspect leads to the second recommendations. Many local

energy initiatives are connected to other initiatives. They profit from these connections by learning from each other and not reinventing the wheel each time. Furthermore, it could be that some future solutions in the energy system are is need for a higher supply or demand that one neighborhood can provide. In that case, local energy initiatives can work together to reach this supply or demand. Local energy initiatives that are not yet involved in a strong network with other initiatives, are highly recommended to do so. In this way they can profit from the same advantages.

12.3.3 Further research and future directions

Further research is needed to optimize the use of the five defined roles for the local energy initiatives and the use of the final concept. In the first place, the final concepts needs be further developed and optimized in real-life cases. The final concept is based one three main questions, sub-questions and perspective questions. All these questions can be seen as the building blocks of the concept. These building blocks can be changed, removed or added. Therefore, the final concept is modular. Since, the final concept is not yet been used in the work of the client, it can be that the building blocks need to be optimized somewhat. Further research can help with this.

Secondly, to increase the usefulness of the five defined initiative's roles further research can look into the applicability to other contexts. These other contexts can be for example other cities within the Netherlands like Rotterdam, Amsterdam or Utrecht. The same can be done for the final concept. If the roles seem applicable for another context, further research can be done for the usefulness of the final concept in other context. Even when the roles can not be applied to a certain context the final concepts could be useful. The modularity of the concept allows to change the concept to a certain contexts. This is possible since the main principle of the final concept is the use of the three perspectives when creating the strategy.

Furthermore, there are a number of topics which seem interesting for future studies based on this research. In the first place, the final concept is developed to help the client create a strategy and action repertoire to collaborate with the local energy initiatives. This strategy will allow the municipality to stimulate citizen participation through the local energy initiatives. It could be interesting to find a way to measure the impact of the strategy and the final concept. Therefore, future studies could dive into ways to measure the impact of the local energy initiatives in general and specifically on citizen participation in the neighborhood. If this impact can be measured, it would be possible to do a baseline measurement prior to the strategy and action repertoire, measurements during the execution and a measurement afterwards. The measurements can furthermore be interesting the track the citizen participation in neighborhoods and also to develop policies based on the impact results.

The second interesting topic for future studies is about how to reach and motivate citizens in the best way. However, there is already a lot of research on this topic, it is still a struggle for the local energy initiatives in The Hague. Future studies could dive into this topic within the specific context of The Hague or even more specific within the context of a neighborhood. It would be even more interesting if these studies could lead towards a practical and implementable communication plan for the local energy initiatives.

The third and last topic is about the representativeness of the local energy initiatives. Out of this research it came forward that the initiatives often struggle with how representative they are for the citizens in their neighborhood. For the municipality it is also hard to deal with this representativeness and therefore the municipality sometimes misinterpreted the initiatives. Furthermore, since the local energy initiatives can only be part of the solution, the municipality needs to develop ways to perform participation trajectories in neighborhoods. Future studies could look into this representativeness in two ways. On the one hand, the representativeness of the local energy initiatives can be researched, how to become more representative, if this is actually needed and if this is the best role for the initiatives. On the other hand, the future studie could research how to create representative participation trajectories in neighborhoods, look into ways to get a representative reaction from a neighborhood and how such a representative reaction is defined.

PERSONAL REFLECTION

When looking back at writing this research, there are ofcourse many things I have learned and experienced. However, there are a few of these things which I want to highlight and share with you.

COMBINATION OF TWO FIELDS INTO ONE PROJECT

One of the biggest challenges was the combination of two fields into one project, namely Industrial Ecology and Industrial Design Engineering. In the first place, it brough a logistic struggle. It was hard to think up front about splitting the main research question into two equal research question each representing an own thesis for each of the Master programs. Secondly, it was a search to find a research approach that made use of each discipline in the most valuable way with respect to each discipline. Furthermore, making clear and meaningful connections between the three phases needed some thoughtfulness. Eventually, this led to the translation of the three phases into a final outcome and concluding chapter. This chapter is key for the value and applicability of this research. Nevertheless, the ability to combine the two fields was something I wanted to show eagerly. Something I am proud to have done and hopefully did honorbly.

SCIENTIFICALLY RELEVANT AND PRACTICLY APPLICABLE

The second point I would like to share with you is about the meet-up of theoretical and practical. This meet-up is somethings I struggled with during this research. Because on the one hand I needed and wanted to write a research which is scientifically relevant and which adds something interesting to existing literature to show my scientific skills. On the other hand, my design hearts beats for practical and valuable solutions. My nightmare is providing the client with a report full of interesting research and hands full of insights without providing them a helping hand what to do with these insights. Therefore, it was essential that this research was closing with an actual practical solution, which the municipality can implement and develop further without my presence. However, fulfilling both these goals, much deliberation was needed. Within this deliberating, both the supervisory committees of the university and municipality were of great support and kept me sharp. In my opinion, the scientific world and the business world can learn a lot from each other. Especially, if we are talking about subjects like the Energy Transition and fields like Service Design. Therefore, I will definitely use the experiences I gained during this project regarding mixing theoretical and practical in my professional career.

CO-DESIGN THE LIVING DAYLIGHTS OUT OF IT..!

In the starting year of my Bachelor Industrial Design Engineering, I thought that the involvement of users was a bit boring, difficult and just something you had to do. Often, it was implemented in a fast and short usability test or user experience review. However, over the years my thoughts have changed drastically. Users are gaining more and more my interest. At this moment I have come to the point that the users or actually humans should be the center of my design process. Especially, when projects contain a societal problem, I would say it is even more suitable and important to make them the center and also to include them in the design process. Therefore, I tried to include the the local energy initiatives and civil servants much within this research. I did this with multiple interviews, workshops, and prototyping sessions. It showed me once again the value of the inclusion of target groups and users. However, it would have been great if I could have tested the final concept in a real life case with the a local energy initiatives and the client. Together we could have tested and prototyped and in this way brought the concept to an even higher level and making it more implementably ready.

My appreciation for co-design and a human-centered approach within this research provided me with the final push to start looking for a jobs in the field of Service Design to start my career as a professional.

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APPENDICES

The appendices include the supplementary material of this research which provides additional information on the topic, research approach, methods and results.