

Government support for community action

Explorative research on the supportive role of local and regional governments in Community Renewable Energy (CRE) initiatives



240 solar panels on the elementary schools Valkenbos and CMS Abeel (Duurzaam Den Haag, 2021)

Name: Ries Verhoeven
Student number: 5515556
Supervisor: Dr. Heleen Mees
Second reader: Dr. ir. Dries Hegger
Email: r.w.verhoeven@students.uu.nl
Credits: 30EC
MSc. Sustainable Development – Earth System Governance



Utrecht University



Earth
System
Governance

Abstract

To limit climate change, the Dutch government aims to reduce greenhouse gas emissions by 49% by 2030. To achieve this goal, a transformation in the energy sector is necessary. The production of renewable energy provides opportunities for a decentralised energy system. In the discourse of the 'participation society' in the Netherlands, local communities are increasingly perceived as key players in the transition to a low-carbon energy system. An emerging phenomenon in the renewable energy sector are Community Renewable Energy (CRE) initiatives. These can be defined as citizen-led initiatives that propose collaborative solutions on a local basis to facilitate the development of sustainable energy technologies and practices. The active role of citizens in the production of public goods lead to new roles of local and regional governments. The role of the government is not vanishing, but rather shifting towards a more responsive and facilitating government.

This research aims to answer the following research question: *How and to what extent do local and regional governments support CRE initiatives?* The research question is answered by comparing the two case studies of the municipalities of The Hague and Rotterdam. In addition, the regional level is included by analysing the role of the Province of South Holland. In total twenty-eight in-depth interviews were conducted with CRE initiative representatives, intermediary representatives, municipal officials, provincial officials, and experts. To structure the empirical research the initiatives were classified on their types and phases.

The results reveal that the municipalities mainly offered advice and legal support in the facilitating role and subsidies and roofs to install solar panels in stimulating CRE initiatives. Compared to Rotterdam, The Hague offered more and diverse practices, such as hosting a working group and organising a prize competition. The province of South Holland mainly offers a subsidy and created a learning network in which initiatives exchange experiences and knowledge. The offered practices varied by phase, rather than type of initiative. The supportive role of the municipalities is limited due to the lack of internal alignment, flexibility (bureaucracy), resources and capacity, participation of initiatives, and lack of vision by the municipality. The absence of policies on dealing with citizen initiatives limits the supportive role of the municipalities and province. The results indicate that the governments have great potential to enhance their supportive role. Ultimately, the initiatives want to gradually grow towards a partnership with the municipality to work in process of co-creation to achieve results in the energy transition.

Acknowledgement

Last week's events of extreme weather, like the record breaking heat in Canada and the floods in Germany, Belgium and the Netherlands show that combatting climate change is a case of serious urgency. One of the major challenges is the transformation of the current energy system. Hopefully, this research will offer some important qualitative insights to enhance the role of local and regional governments in supporting citizen initiatives that are active in the renewable energy sector.

First, I would like to thank all the respondents of the initiatives and intermediary organisations in The Hague and Rotterdam for participating in my research. Second, I would like to thank the government officials of the Municipality of The Hague, the Municipality of Rotterdam, and the Province of South Holland for their willingness to participate in the interviews. Especially, I want to thank Joey ten Cate for his input on my research proposal and advice during the research. Third, I want to thank Ruud Schuurs, Thomas Hoppe, and Anne Marieke Schwenke for their time to reflect on the result of my research. Moreover, I want to thank Heleen Mees for her valuable and encouraging feedback during the research. Finally, I want to thank Dries Hegger for his constructive comments on my research proposal.

Ries Verhoeven

Amsterdam, the Netherlands
20th of July, 2021

Table of Contents

1. Introduction	6
1.1 Knowledge gap	7
1.2 Research question	7
1.3 Research framework	8
1.4 Scientific relevance	9
1.5 Societal relevance	9
1.6 Outline of research.....	10
2. Theory	11
2.1 Citizen initiatives	11
2.1.1 CRE initiatives.....	11
2.2 Types and phases	12
2.3 Role of local and regional governments.....	13
3. Methods	19
3.1 Case study design	19
3.2 Case selection.....	19
3.3 Data collection	21
3.4 Data analysis	22
4. Case study: Municipality of The Hague	24
4.1 CRE initiatives in the Municipality of The Hague.....	24
4.1.2 Intermediary organisation: Duurzaam Den Haag.....	26
4.2 Roles and practices: Municipality of The Hague	27
4.2.1 Type and phase	30
4.3 Barriers: perspective CRE initiatives and intermediary organisation	31
4.4 Barriers: perspective municipal officials	35
4.5 Ideal roles local and regional government: perspective CRE initiatives.....	37
4.6 Ideal roles of the local government: perspective municipal officials.....	39
4.7 Conclusion: Municipality of The Hague.....	40
5. Case Study: The Municipality of Rotterdam.....	41
5.1 CRE initiatives in the Municipality of Rotterdam	41
5.1.1 Intermediary organisation: Energie van Rotterdam.....	42
5.2 Roles and practices: Municipality of Rotterdam	43
5.2.1 Type and phase	45
5.3 Barriers: perspective CRE initiatives and intermediary organisation	46
5.4 Barriers: perspective municipal officials	49
5.5 Ideal roles local and regional government: perspective CRE initiatives.....	51

5.6 Ideal roles of the local government: perspective municipal officials.....	52
5.7 Conclusion: Municipality of Rotterdam	53
6. Province of South Holland.....	54
6.1 Roles and practices regional government.....	54
6.1.1 Type and phase	56
6.2 Barriers: perspective provincial officials	57
6.3 Ideal roles of the regional government: perspective provincial officials	58
6.4 Conclusion: Province of South Holland	58
7. Comparative analysis	59
7.1 Comparing the intermediary organisations	59
7.2 Comparing the roles and practices of the local and regional government	60
7.2.1 Type and phase	64
7.3 Comparing barriers: perspective CRE initiatives and intermediary organisations.....	65
7.4 Comparing barriers: perspective local and regional government.....	67
7.5 Comparing the Ideal roles: perspective CRE initiatives and intermediary organisations.....	69
7.6 Comparing the ideal roles: perspective government.....	70
8. Discussion.....	72
8.1 Comparing the empirical results with the literature review	72
8.1.1 Enrichment literature.....	74
8.2 Potential adjustments roles Analytical framework	75
8.2.1 Preconditions	75
8.2.2 Adjustment framework	76
8.3 Type and phase	77
8.4 Theoretical reflections	78
8.5 Limitations.....	79
9. Conclusion.....	80
9.1 Policy recommendations.....	82
Bibliography	84
Appendix A: Overview respondents initiatives and intermediary organisations.....	92
Appendix B: Overview respondents government officials and experts	93
Appendix C: Mail respondents.....	94
Appendix D: Interview guide initiatives	95
Appendix E: Interview guide government official	96
Appendix F: Coding scheme NVIVO	97

List of figures

- Figure 1. Research framework
- Figure 2. Case study design adapted from Yin (2009)
- Figure 3. Map of CRE initiatives in the Municipality of The Hague (modified from Gemeentenatlas, 2021)
- Figure 4. Map of CRE initiatives in the Municipality of Rotterdam (modified from Gemeentenatlas, 2021)
- Figure 5. Comparing the barriers of the government officials with the barriers of the CRE initiatives and intermediary organisations
- Figure 6. Towards a partnership of municipalities and initiatives (Schuurs, 2021)
- Figure 7. Roles of local government in supporting CRE initiatives adapted from Mees et al. (2019) and Schuurs (2021)

List of Tables

- Table 1. The ladder of government participation adapted from Mees et al. (2019)
- Table 2. Selection criteria case studies
- Table 3. Selection criteria initiatives adapted from HIER Opgewekt (2020)
- Table 4. Overview interviewees per case study
- Table 5. Overview of CRE initiatives and the intermediary organisation in the Municipality of The Hague
- Table 6. Overview roles and practices of the Municipality of The Hague
- Table 7. Overview barriers perspective CRE initiatives and intermediary organisation in The Hague
- Table 8. Matching the barriers of CRE initiatives with the barriers of the municipal officials
- Table 9. Overview of ideal roles in de words of the CRE initiatives and the intermediary organisation
- Table 10. Overview of CRE initiatives and the intermediary organisation in the Municipality of Rotterdam
- Table 11. Overview roles and practices of the Municipality of Rotterdam
- Table 12. Overview barriers perspective CRE initiatives and intermediary organisation in Rotterdam
- Table 13. Matching the barriers of CRE initiatives with the barriers of the municipal officials
- Table 14. Overview of ideal roles in de words of the CRE initiatives and the intermediary organisation
- Table 15. Overview roles and practices of the Province of South Holland
- Table 16. Overview differences and similarities intermediary organisations
- Table 17. Comparing the practices and roles of the municipalities and the province
- Table 18. Comparing the barriers: perspective CRE initiatives and intermediary organisations
- Table 19. Comparing the barriers: perspective government officials
- Table 20. Comparing the ideal roles: perspective CRE initiatives and intermediary organisations
- Table 21. Comparing the ideal roles: perspective government officials
- Table 22. Comparing the literature review with the empirical results

1. Introduction

In the Paris Agreement of 2015, it became clear that, in order to reduce greenhouse gas emissions and limit climate change, a transformation in the energy sector is necessary (UN, 2015). As opposed to the more centralised fossil energy production, the production of renewable energy provides opportunities for a more decentralised and decarbonised energy system (Bauwens et al., 2016; Goldthau, 2014; Wierling et al., 2018). A more decentralised energy system requires new approaches for local governance (Brisbois, 2020) since the responsibility for producing public goods is shifting from the government to local communities (Igalla et al., 2019). Following the discourse of the 'Big Society' in the United Kingdom and the 'Participation Society' in the Netherlands, citizens are perceived as empowered actors to deliver social services (Kisby, 2010; Movisie, 2017; ROB, 2012). The government is encouraging citizens to become active in their community and thus rely less on local governments (Silva & Horlings, 2020). More active citizens in the coproduction of public goods lead to new roles of local governments. The role of local governments is not vanishing but is shifting to a more collaborative, responsive, and facilitating government (Mees et al., 2019).

In Europe, local communities are increasingly perceived as key players in the transition to low-carbon energy systems (Bauwens, 2016; Boon & Dieperink, 2014). Community energy is perceived as an '*emergent phenomenon*' (p. 674) where citizens actively participate in the energy market (Schoor & Scholtens, 2015). In several countries such as Germany, United Kingdom, Denmark, and the Netherlands the governments showing a growing interest in active citizenship in the energy transition (Soeiro & Dias, 2020). Although citizen initiatives emerge as a bottom-up process, there is often interplay with local (municipal) and regional (provincial) governments (Edelenbos et al., 2018; Healey, 2015). Especially, in the generation of renewable energy, governmental institutions and public policies are essential in supporting citizen initiatives (Hufen & Koppenjan, 2015; Meijerink & Stiller, 2013; Warbroek & Hoppe, 2017). In this research, citizen initiatives active in the energy sector are defined as Community Renewable Energy (CRE) initiatives, which are: "*formal or informal citizen-led initiatives which propose collaborative solutions on a local basis to facilitate the development of sustainable energy technologies and practices*" (Bauwens, 2016, p. 3).

The Netherlands is an interesting case for research as the government promotes active citizenship (Verhoeven & Tonkens, 2013) and the number of CRE initiatives is rapidly increasing (Boon & Dieperink, 2014; Da Silva & Horlings, 2020; Hufen & Koppenjan, 2015; Van Der Schoor & Scholtens, 2015), from 243 in 2015 to 623 in 2020 (HIER Opgewekt, 2020). The Dutch Climate Agreement of 2019 states that CO₂ emissions must be reduced by 49% by 2030, and by at least 95% by 2050. Moreover, for large-scale generation of renewable electricity on land, the aim is to obtain 50% ownership by the local environment (citizens and businesses) in 2030 (Klimaatakkoord, 2019). Through these national targets, local and regional governments are forced to set goals on the share of renewable energy in their region (Hufen & Koppenjan, 2015; Silva & Horlings, 2020). To achieve these goals, the role of local communities in renewable energy generation can no longer be neglected (Boon & Dieperink, 2014; Frantzeskaki et al., 2013; HIER Opgewekt, 2020). The participation of citizens in CREs will lead to more social acceptance towards renewable energy (Bauwens, 2016; Bauwens & Devine-Wright, 2018), public support towards the energy transition (Ministerie van Economische Zaken, 2016), and are a source of innovation (Hasanov & Zuidema, 2018). The discourses and motivations of CRE fit well with the ambitions of local and regional governments (Oteman et al., 2017). As long as local and regional governments and CRE initiatives share the same goal on reducing CO₂ emissions, the collaboration

between local governments and local initiatives seems promising (Hufen & Koppenjan, 2015; Warbroek, et al., 2018) and could lead to new forms of collaboration (Da Silva & Horlings, 2020).

In governing climate change, the traditional mode of governing through authority with regulations is increasingly making space for governing in a way the local government has a more encouraging, coordinating, and facilitating role (Bulkeley & Kern, 2006). To explore the roles of local governments in supporting citizens' initiatives, Mees et al. (2019) developed a ladder of government participation (in Dutch called the 'overheidsparticipatietrap'). In contrast to public participation, government participation takes place when the government participates in an initiative that originates from citizens (Edelenbos et al., 2017). The level of government participation, in CRE initiatives, depends on the type (Hick & Ison, 2018) and phase of the initiative and can change over time (Mees et al., 2019). Recent research shows that there is a lack of understanding of the interplay between CRE initiatives and local and regional governments (Hasanov & Zuidema, 2018).

1.1 Knowledge gap

The success of CRE initiatives in the energy system of the future depends on the support of local and regional governments (Hoppe et al., 2015; Markantoni, 2016; Maroni et al., 2019; Rogers, et al., 2008; Warbroek & Hoppe, 2017). The provincial and municipal governments have the legal and administrative jurisdiction to enable or constrain the initiation and continuation of CRE initiatives (Cruz, 2018; Oteman et al., 2017; Warbroek & Hoppe, 2017). Despite the growing body of literature on CRE, there is limited research on the role of local and regional governments in supporting the CRE initiatives (Hasanov & Zuidema, 2018; Mey, Diesendorf, & MacGill, 2016). Research on CREs has been mostly restricted to the lens of individual motivations (Bauwens, 2016; Bauwens et al., 2016; Dóci & Vasileiadou, 2015; Sloot et al., 2019).

According to Igalla et al. (2020), government support has a positive effect on the performance of citizen initiatives. However, the type of support and the roles of the government remain unclear. This knowledge gap is also reflected in the existing literature regarding the role of the local and regional governments in supporting CRE initiatives, where no distinction is made between the different roles of the government. Mees et al. (2019) encourage researchers to further develop the ladder of government participation to other public policy fields and institutional contexts, such as the energy transition. If local and regional governments acquire a better understanding of their role towards different types of CRE initiatives, targeted support can be improved (Hick & Ison, 2018). Moreover, by identifying the barriers initiatives and intermediary organisations face in the interaction with the local government, the challenges of the government will become clear. The lack of understanding of the challenges local governments are confronted with may eventually lead to local governments frustrating citizen initiatives, instead of supporting them (Mees et al., 2019).

1.2 Research question

This study aims to explore the different roles of local and regional governments in supporting CRE initiatives, by analysing and comparing cases of governmental support to different CRE initiatives in the Dutch municipalities of The Hague and Rotterdam in the Province of South-Holland. The ultimate aim is to provide recommendations to the municipalities and the province to enhance their supportive role towards CRE initiatives. This leads to the following research question:

How and to what extent do local and regional governments support CRE initiatives?

To answer the research question, five sub-questions were formulated:

1. According to the literature, which roles can local and regional governments fulfil in supporting CRE initiatives?
2. What types of roles and practices do local and regional governments fulfil in supporting CRE initiatives, and to what extent do these roles and practices change for different types and phases of the initiatives?
3. Which barriers do CRE initiatives and intermediary organisations face in the interaction with the local government?
4. Which barriers do local and regional governments face when performing their role in supporting CRE initiatives?
5. What is the ideal role of local and regional governments in supporting CRE initiatives according to the municipal officials, provincial officials, CRE initiative representatives, and intermediary organisation representatives?

This research yields *descriptive knowledge*, to describe the roles of local and regional governments in supporting CRE initiatives. This description is based on a literature review (sub-question 1) and the results of the interviews and the analysis of policy documents (sub-question 2). The identified barriers in the interviews (sub-questions 3 and 4) provide *explanatory knowledge* as they provide explanations for the limited supportive role of the governments and identify areas for improvement. Sub-question five generates *prescriptive knowledge* to provide recommendations on the ideal role of local and regional governments in supporting CRE initiatives (Verschuren & Doorewaard, 2010).

1.3 Research framework

Figure 1 presents an overview of the steps to answer the main research question. The first sub-question was answered by conducting a literature review on the practices of local and regional governments in supporting CRE initiatives. This has led to an analytical framework that was used as input for the next phase of the research. As input to the interviews with the government officials, CRE initiative representatives, and intermediary organisation representatives, the following resources have been analysed: literature on citizens' initiatives, policy documents, and grey literature such as websites of CRE initiatives. In addition, online meetings of the province of South Holland were attended to obtain prior knowledge on the role of the province. Sub-questions 2, 3, 4, and 5 were answered through information derived from the interviews. After the data analysis, the results of the study were validated with experts. Finally, recommendations to the municipalities and the province were made and an answer to the overarching research question was given.

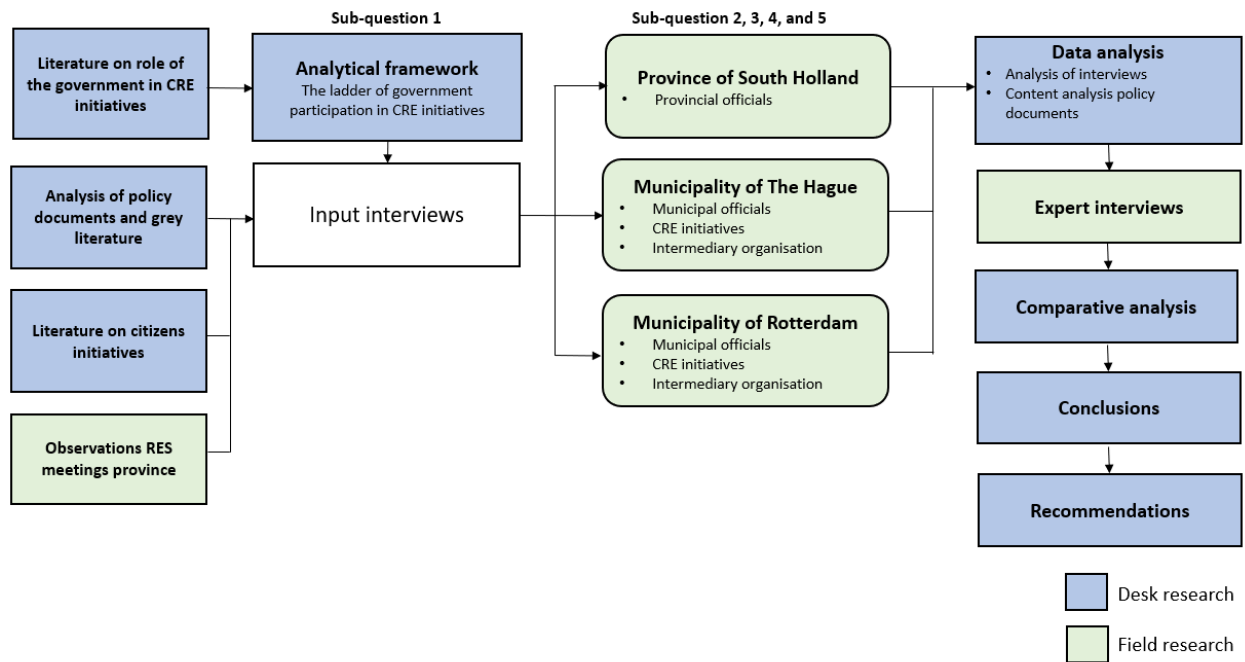


Figure 1. Research framework

1.4 Scientific relevance

Despite the increasing scholarly attention for CRE initiatives, there is a lack of research on the different roles local and regional governments fulfil in supporting CRE initiatives. This research is focused on filling this knowledge gap by exploring the roles and practices of local and regional governments by using the ladder of government participation of Mees et al. (2019). Moreover, government support for citizen initiatives often comes with a ‘price tag’ (Igalla et al., 2019). According to Igalla et al. (2019), further research is needed to identify the barriers that citizen initiatives face in receiving government support. Therefore, this research contributes to the scientific field by identifying the challenges local and regional governments face in supporting CRE initiatives. As CRE initiatives are the most common type of citizen initiatives in the sustainability sector, this research will also gain valuable insights for future studies on the supportive role of local and regional governments in other types of citizen initiatives.

1.5 Societal relevance

One of the conditions for a successful energy transition is the participation of local communities in new bottom-up initiatives and experiments (Ornetzeder & Rohrer, 2013; Rotmans, 2012). Citizens show to be increasingly interested in both energy democracy and sustainability (Szulecki, 2018). This combination offers citizens the opportunity of starting initiatives to create a new kind of relation with energy (Hewitt et al., 2019). If local and regional governments acquire a better understanding of their role towards CRE initiatives, the potential of CRE initiatives contributing to the energy transition will increase (Warbroek & Hoppe, 2017). In government support towards CRE initiatives, a one-size-fits-all approach does not exist (Seyfang et al., 2013). There is no single policy approach that favours all types of CRE initiatives (Maroni et al., 2019). Local and regional governments need to differentiate between different types and phases of CRE initiatives for enhanced support (Hick & Ison, 2018; Moroni et al., 2019).

1.6 Outline of research

The following chapter provides a conceptual clarification of CRE initiatives and a literature review on the roles and practices of the local and regional governments in supporting CRE initiatives. This results in the analytical framework to structure and guide the research. Second, chapter three presents the research strategy for conducting the empirical research. The fourth and fifth chapter presents the results of the case studies of the Municipality of The Hague and the Municipality of Rotterdam. To include the regional level, chapter six presents the results of the Province of South Holland. Subsequently, chapter seven provides a comparative analysis between the case studies. Finally, chapter eight reflects on the result and the theoretical insights of this study, and in chapter nine conclusions are drawn and recommendations are made.

2. Theory

This chapter presents the theoretical background of the research. First, a conceptual clarification of CRE initiatives is provided through an assessment of the literature of citizen initiatives, self-organisation, social innovation, and community renewable energy in section 2.1. Second, to structure the empirical research, the classification of initiatives in different types and phases is discussed in section 2.2. Finally, the roles of local and regional governments are further operationalised in a literature review on the practices of local and regional governments in supporting CRE initiatives in section 2.3. This results in an analytical framework to structure and guide the research.

2.1 Citizen initiatives

Among scholars, citizen initiatives are studied through the lens of various concepts (Silva & Horlings, 2020) such as social innovation (Avelino et al., 2019), grassroots movement (Feola & Nunes, 2014), bottom-up movement (Edelenbos et al., 2017), citizen collectives (Melville, et al., 2017) and, self-organisation (Boonstra & Boelens, 2011). As this research focuses on the role of the government, citizen initiatives are defined as a way of self-organisation. The self-organisation of citizens represents an alternative to the traditional government to provide welfare services (Bekkers et al., 2014; Nederhand et al., 2016). Citizens mobilise resources and energy to design and execute projects to provide a public service or good for the community (Igalla, 2019; Voorberg et al., 2013). The active role of citizens does not render the government obsolete, but requires new ways of government support (Bekkers et al., 2014). According to Edelenbos et al. (2018, p.53), self-organisation can be described as *“bottom-up initiatives that are community-driven and aim to advance public administration and policy making via sustainable models of cooperation among citizens.”* Although scholars argue that the government is retreating (Nederhand et al., 2016), self-organising citizen initiatives are not isolated from the local institutional and political context (Bekkers, et al., 2014; Hasanov & Zuidema, 2018). Therefore, examples of self-organisation without any governmental influence are scarce (Bekkers, et al., 2014). Citizens are responsible for controlling the initiative but work within the institutional context of the government (Healey, 2015).

In the self-organisation of citizens, the concept of social innovation plays an important role because the traditional government as the producer of public services is challenged by citizens (Bekkers et al., 2014). Pel & Bauler (2014) argue that social innovations are filling the gaps left by a retreating government. The retreating government has created space for communities to explore new ways of providing public services and goods (Klievink & Janssen, 2014). Social innovations can be defined as *“new ideas (products, services, and models) that simultaneously meet social needs (more effectively than alternatives) and create new social relationships or collaborations”* (BEPA, 2010, p. 33). According to Bekkers et al. (2014), the concept of social innovation is based on two goals. The first goal is to overcome challenges in modern western societies. The second goal of social innovation is to explore the changing (diminishing) role of the government. The concept of social innovation is often used to discuss the role of the government in providing public services and goods to explore new governance arrangements (Bekkers et al., 2014).

2.1.1 CRE initiatives

A substantial part of citizen initiatives is active in the sustainable energy sector (Igalla, 2019). In this research, these types of citizen initiatives are specified as ‘CRE initiatives’. CRE initiatives are defined as *“formal or informal citizen-led initiatives which propose collaborative solutions on a local basis to*

facilitate the development of sustainable energy technologies and practices” (Bauwens, 2016, p. 3). CRE initiatives include both energy generation and energy conservation projects (Seyfang et al., 2014), and typically have a high degree of involvement of local communities in the execution, ownership, and benefits of the projects (Walker & Devine-Wright, 2008). There is a great variety in the scale and type of CRE initiatives (Hufen & Koppenjan, 2015; Oteman et al., 2017), with each their own environmental, societal, political, and/or economic motivations (Arentsen & Bellekom, 2014; Oteman et al., 2017; Hoppe et al., 2015). According to Hicks & Ison (2018), a CRE initiative should contain five aspects: involvement of local actors, engagement of the community, the local appropriate scale of renewable energy technology, an even distribution of financial benefits over the community, and participatory decision-making. However, Hicks & Ison (2018) do not attempt to formulate a prescriptive definition of CRE. Policymakers and professionals should draw their own boundaries in approaching CRE initiatives (Hick & Ison, 2018). On the one hand, the broad definition of CRE can be seen as a strength, as the term is widely accepted among policy-makers, scholars, and initiatives, and adaptable to the local context (Seyfang et al., 2013). On the other hand, the broad definition makes the term ambiguous and thereby difficult to apply (Seyfang et al., 2014). Hicks & Ison (2018) argue that as a result of the various forms of CRE, a single definition is not likely to be generally accepted. Likewise, if the definition of CRE is too specific, innovations to establish new forms of CRE can be hampered (Bird & Barnes, 2014). The definition of CRE initiatives affects the way local governments make decisions about the regulations and the support of CRE initiatives (Hick & Ison, 2018).

The concept of social innovation is relevant to describe CRE initiatives as the initiatives are an innovation in the energy sector with the focus on community participation (Avelino et al., 2019; Hewitt et al., 2019). Moreover, the definitional ambiguity of CRE initiatives fits well within the description of social innovation. Studies of social innovations in the energy system started with research on the social acceptance of large renewable energy projects, such as wind farms. Due to the large-scale nature of the projects and limited citizen participation, there has been a lot of resistance of local communities (Devine-Wright, 2005). In recent studies on social innovations in the energy system, CRE initiatives are examined through the lens of social entrepreneurship to describe the purpose, organisation form, and ownership of initiatives (Becker, Kunze, & Vancea, 2017). Hoppe & De Vries (2019) argue that social innovation also includes the introduction of new energy practices related to the distribution, use, storage, and production of energy. Hoppe & De Vries (2019, p.4) define social innovation in the energy transition as *“innovations that are social in their means and contribute to low carbon energy transition, civic empowerment and social goals pertaining to the general wellbeing of communities.”* This can relate to new forms of organisations, new forms of governance at the local and regional level, and new regulations and policies to empower communities to stimulate the energy transition (Hoppe & De Vries, 2019).

2.2 Types and phases

In analysing CRE initiatives, it is useful to differentiate between different types of initiatives (Hick & Ison, 2018), to systematically study the different roles of the local government (Chin & Mees, 2021). Moreover, different types of citizen initiatives aim for different social outputs, which require a different supportive role of local governments (Chin & Mees, 2021). According to Moroni et al. (2019), different types of government support could be more favourable to different types of CRE initiatives. The extent the governmental support differs for certain types of CRE initiatives is not described in the literature. However, theories such as the approaches on multi-level perspectives and the theory of

socio-technical niches, are criticised for not distinguishing different types of CRE, but treat it as one phenomenon (Seyfang et al., 2014). For targeted support, local and regional governments need to differentiate between different types of CRE initiatives (Hick & Ison, 2018; Moroni et al., 2019).

According to Seyfang et al. (2014), community energy is a '*pluralistic sector*' (p.25) with different forms of organisation, technologies, goals, and business models. Energy cooperatives are the most well-known organisation type. However, other more informal and formal organisational modes (Walker & Devine-Wright, 2008; Hufen & Koppenjan, 2015), such as foundations, associations, and initiatives in the process of formal registration exist (Oteman et al., 2017). Furthermore, CRE initiatives perform a variety of activities. According to the Local Energy Monitor of HIER Opgewekt (2020), activities of initiatives can be subdivided into seven domains: collective solar projects, collective wind projects, heat projects, energy conservation, energy supply, mobility, and innovative projects such as the use of hydrogen and energy storage (Hier Opgewekt, 2020). As a result of the different activities of initiatives, there is not a one-size-fits-all approach for governmental support (Seyfang et al., 2013).

Due to the definitional ambiguity of CRE initiatives, there is no uniform classification for different types of CRE initiatives. To structure the empirical data in this research, the CRE initiatives are classified on their main type of activities to be able to compare the initiatives. The initiatives in this research mainly perform collective solar projects and heat projects. First, collective solar projects are solar energy projects that are realised in a citizen collective by and for citizens (HIER Opgewekt, 2020). Second, heat projects can be defined as citizens who are involved in the heat transition in their residential area (neighbourhood, district, municipality, or region) in a collectively organised way. Within the initiative, the members work together on a district or neighbourhood energy plan, a collective heat supply, and/or represent the interests of residents in municipal planning (HIER Opgewekt, 2020).

Besides the distinction between the types of initiatives, a distinction between the phases of initiatives is also relevant for the type of governmental support (Healey, 2015). According to Igalla et al., 2020 the type and strength of governmental support are likely to be related to certain phases of a citizen initiative. Igalla et al. (2020. p. 617) distinguish five different phases of a citizen initiative: "*initial phase (researching, preparing, experimenting; acting as reference category), growing phase (mobilizing supporters, recognition by established parties), mature phase (fully operational), upscaling phase (exploring additional, new services) and finishing phase (initiative is drawing to a close, completion).*" The five phases of Igalla (2020) were used in this research and were determined based on a question in the interviews. To conclude, this research explored both the potential relationship between the **type** (1) collective solar projects and (2) heat projects and the **phase** of CRE initiatives (1) initial phase, (2) growing phase, (3) mature phase, (4) upscaling phase and, (5) finishing phase, with the type and strength of government support.

2.3 Role of local and regional governments

In Western democracies, a shift is taking place from 'government to governance'. This shift describes the change from a hierarchical traditional government that governs with regulations and laws, to more horizontally organised forms of governing through self-regulating networks (Lo, 2018; Sørensen, 2002). The solutions for societal problems are no longer controlled by the government, but more attention is paid to the interaction in networks between the civil society, businesses, and the government (Driessen et al., 2012). Illustrative for this new mode of governance is the discourse of the 'Big Society' in the United Kingdom and the 'Participation Society' in the Netherlands (Kisby, 2010; Movisie, 2017; ROB, 2012), where the government is encouraging citizens to become active in their community and

thus rely less on governments (Bekkers et al., 2014; Silva & Horlings, 2020). The traditional form of hierarchical government is still common in governance (Hill & Lynn, 2004). However, in governing climate change governing 'by authority' increasingly making way for governing 'by enabling' in which the local government has a more co-ordinating and facilitating role (Bulkeley & Kern, 2006).

This governance paradigm is also reflected in the energy transition. Traditionally, energy policy is regulated through national governments due to the centralised electricity system (Mey et al., 2016). However, the decentralised production of renewable energy provides opportunities for local governance. Nowadays, the national government sets the targets to reduce greenhouse gas emissions and the implementation is conferred to the local and regional levels of governance (Da Silva & Horlings, 2020). The value of the role of local and regional governments is obvious, as they have more knowledge about the local needs and are more accessible than the national government (Warbroek & Hoppe, 2017). Especially, the trend of decentralisation of the public administration provides more opportunities for local and regional governments to support CRE initiatives (Da Silva & Horlings, 2020).

To explore the roles of local governments in citizens' initiatives, Mees et al. (2019) developed a ladder of government participation. This ladder is based on the ladder of government participation (in Dutch called the: 'overheidsparticipatietrap') of the Dutch Council for Public Administration (DCPA). To select the appropriate role of the government in supporting citizen initiatives, the ladder consists of five different rungs: (1) letting go, (2) facilitating/enabling, (3) stimulating, (4) network steering, and (5) regulating. The idea behind this ladder is that the local government can either ascend it for more control or stay low to give room to initiatives to develop themselves (Frantzeskaki et al., 2013; ROB, 2012). There is no one best role of the government, in every situation the politics have to make explicit what role they see fit for the government (ROB, 2012). The ladder can be compared to Arnstein's ladder of citizen participation in which each ascending step represents an increasing level of citizen control in decision-making power (Arnstein, 1969). The contrast between the ladders is that Arnstein (1969) describes participation from the perspective of citizens and Mees et al. (2019) from the perspective of the government. According to Igalla et al. (2020), initiatives, where citizens control the decision-making, can be classified as the highest level of Arnstein's (1967) citizen participation ladder.

The ladder of government participation of Mees et al., (2019) can be used as an analytical framework to compare and explore different roles of local governments. However, in practice, the boundaries between the different roles are not always evident, since roles can overlap (Mees et al., 2019). In the case of CRE initiatives, the role of the government can vary from no interaction with citizens at all (Boon & Dieperink, 2014), to local governments participating as co-owners in CRE initiatives (Hoppe & Miedema, 2020). However, local and regional governments always shape the playing field for the development of CRE initiatives (Warbroek & Hoppe, 2017). In this research, the analytical framework of Mees et al. (2019) was used as a starting point to explore the different roles local and regional governments can fulfil in supporting CRE initiatives.

In a literature review on the practices of local and regional governments in supporting CRE initiatives, the roles of local and regional governments were further operationalised. In the search engines Google Scholar and Scopus the search words 'community renewable energy initiatives', 'community energy initiatives', 'local energy initiatives', 'regional government' and 'local government' were used to select 30 relevant articles. Table 1 presents the findings of the literature review. The analytical framework contains the general description of the practices found in the literature. The main findings of the literature review were discussed per rung of the analytical framework.

Table 1. The ladder of government participation adapted from Mees et al. (2019)

Rung	Roles for local governments	Who initiates, who coordinates, and who decides	Practices of local government roles	Practices of local and regional government roles in CRE initiatives
5	Regulating	Government regulates interventions by the community, so initiates, coordinates and decides (hierarchical government)	Policy making, organising traditional public participation such as hearings and citizen juries, checking, enforcing regulations, and sanctioning in case of noncompliance	<ul style="list-style-type: none"> • Policies and regulations targeting CRE initiatives (Hoppe et al., 2015; Pinker et al., 2020; Seyfang et al., 2013; Silva & Horlings, 2020; Warbroek & Hoppe, 2017) • Adapting spatial planning programs (Warbroek & Hoppe, 2017) • Adapting conditions of construction fees (Warbroek & Hoppe, 2017) • Civic participation requirement in low-carbon energy installation (Warbroek & Hoppe, 2017) • Participation and co-creation of the vision and strategy of a CRE pilot (Hoppe & Miedema, 2020) • CRE initiative led and owned by the local government (Hicks & Ison, 2018)
4	Network steering	Government (co-) initiates and creates a network of public and private stakeholders; it coordinates the decision-making process. Decisions are co-decided in the network	Process coordination, fostering of dialogue and negotiation among stakeholders, mediation of interests, arbitration of conflicts, trust building, creation of a level playing field through rules of the game	<ul style="list-style-type: none"> • Creating a learning capacity where both the local government and CRE initiatives learn from each other (Hoppe et al., 2015) • Local government creates a network with other local government and initiatives to advocate for institutional changes and/or new policy schemes on higher government levels that enable CRE initiatives (Mey et al., 2016) • Involvement of CRE initiatives in the policy process (Warbroek & Hoppe, 2017) • A partnership between the CRE initiative and local government (Hicks & Ison, 2018) • Local government is co-owner of solar PV farm (Warbroek & Hoppe, 2017) • Local governments in collaboration with initiatives set targets on locally-owned renewable sources (Koirala et al., 2016) • CRE initiatives as means to achieve policy goals on renewable energy (Beermann & Tews, 2017; Warbroek & Hoppe, 2017) • Local government invites citizens with certain profile attributes to establish a CRE initiative (Hoppe et al., 2015)
3	Stimulating	Government actively stimulates the initiation and continuation of community initiatives. Initiatives coordinate and decide independently from government	Provision of structural (financial) support during a longer period	<ul style="list-style-type: none"> • Financial support through loans and subsidies (De Boer et al., 2018; Doci et al., 2015; Frantzeskaki et al., 2013; Hoppe et al., 2015; Hufen & Koppenjan, 2015; Koirala et al., 2016; Li et al., 2013; Oteman & Wiering, 2017; Pinker et al., 2020; Pitt & Congreve, 2017; Rydin & Turcu, 2019; Seyfang et al., 2013; Seyfang et al., 2014; Silva & Horlings, 2020; van der Waal et al., 2020; Wang et al., 2017; Warbroek et al., 2018) • Low-interest rate loans (Frantzeskaki et al., 2013; Wang et al., 2017) • Technical feasibility studies (Beermann & Tews, 2017; Frantzeskaki et al., 2013; Hufen & Koppenjan, 2015; Mey et al., 2016; Pitt & Congreve, 2017; Van der Waal et al., 2020)

				<ul style="list-style-type: none"> • Allow solar panels on governmental buildings (Beermann & Tews, 2017; De Boer et al., 2018; Hoppe et al., 2015; Mey et al, 2016) • Providing land for a wind farm (Silva & Horlings, 2020) • Providing physical space to CRE initiatives (Warbroek & Hoppe, 2017) • Sub-regional feed-in-tariffs (Frantzeskaki et al, 2013; Seyfang et al., 2013) • Support local experiments with renewable energy technology (Hoppe et al., 2015) • Granting legal permits (Hoppe & Miedema, 2020; Wang et al, 2017) • Fee reductions (Wang et al, 2017) • The municipality as a customer of energy cooperation (Proka et al., 2018; Mey et al, 2016) • Give access to network local government (Hoppe et al., 2015; Oteman & Wiering, 2017) • Demonstrate good practice by Install small-scale PV systems (Mey et al, 2016) • The local government established a working group with CRE initiatives (Pitt & Congreve, 2017) • Organise prize competitions for CRE initiatives (Arentsen & Bellekom, 2014; Seyfang et al., 2013) • Provide and facilitate knowledge transfer (Boon & Dieperink, 2014) • Capacity building, training to improve the skills of members of CRE initiatives (Frantzeskaki et al, 2013; Warbroek, et al., 2018; Warbroek & Hoppe, 2017)
2	Facilitating/enabling	Initiatives are selfinitiated, and the government has an interest in making them happen. Initiatives coordinate and decide independently from government	Boundary spanning activities that facilitate free flows of ideas, people and resources, while maintaining a boundary between the initiative and its institutional environment; Process facilitation, helping the initiative to find its way in the municipal organisation, providing a (very) limited amount of resources and relevant information,	<ul style="list-style-type: none"> • Provide (technical) expertise/advice (Blanchet, 2015; Boon & Dieperink, 2014; De Boer et al., 2018; Frantzeskaki et al, 2013; Li et al., 2013; Oteman & Wiering, 2017; Seyfang et al., 2014; Silva & Horlings, 2020) • Legal and regulatory support (Hufen & Koppenjan, 2015; Li et al., 2013; Mey et al., 2016; Pitt & Congreve, 2017; Van der Schoor & Scholtens, 2015; Warbroek & Hoppe, 2017) • Small set-up subsidies (Warbroek & Hoppe, 2017; Warbroek, et al., 2018) • Small loans (Silva & Horlings, 2020) • Supportive local energy policy (Hufen & Koppenjan, 2015) • Assistance in permit procedures (Warbroek & Hoppe, 2017) • Supportive spatial planning policies (Proka et al., 2018; Silva & Horlings, 2020) • Media attention for 'best practice' initiatives (Hoppe et al., 2015) • Convincing Citizens to join a CRE initiative (Hoppe & Miedema, 2020; Hoppe et al., 2015; Mey et al, 2016) • Organizing network event (Hasanov & Zuidema, 2018; Silva & Horlings, 2020) and engagement events (Hasanov & Zuidema, 2018) • Provide an expert (Doci et al., 2015) • Online information portal (Seyfang et al., 2013)

			schooling and other forms of capacity development	<ul style="list-style-type: none"> • Organise seminars (Frantzeskaki et al, 2013; Mey et al, 2016) • Coordinate bulk buy purchase (Mey et al., 2016)
1	Letting go	Initiatives are selfinitiated, selfcoordinated and selfgoverned without the help of government	None, government is not participating in any direct way, but indirectly by becoming ambassadors for such initiatives	<ul style="list-style-type: none"> • No interference/support from governmental actors (Boon & Dieperink, 2014; Rydin & Turcu, 2019) • Establishment of an initiative without support of the local government (Hasanov & Zuidema, 2018) • No interaction with the local government, choice of the initiative not to involve them (Frantzeskaki et al., 2013)

Rung 1: Letting go

In the role of letting go, the local and/or regional government are not participating in any direct way in an initiative (Mees et al., 2019). The literature review indicates that there are CRE initiatives that receive no direct support and have no interference from the local or regional government (Boon & Dieperink, 2014; Frantzeskaki et al., 2013; Hasanov & Zuidema, 2018; Rydin & Turcu, 2019). A reason for initiatives to not receive support from the government is to remain independent (Hasanov & Zuidema, 2018). However, the examples in the literature of initiatives with no interference from the local and regional government are scarce. Most CRE initiatives are monitored and receive support from the local and/or regional government.

Rung 2: Facilitating

The facilitative role of the local government refers to practices that support the initiative with relevant information and knowledge. In this role, a limited amount of resources are provided by local governments (Mees et al., 2019). The literature reveals that various examples exist of facilitating practices by the local and regional governments in supporting CRE initiatives. The most common practices are providing advice, expertise, and legal and regulatory support (Blanchet, 2015; Boon & Dieperink, 2014; De Boer et al., 2018; Frantzeskaki et al, 2013; Van der Schoor & Scholtens, 2015). In the facilitative role, the local and regional governments have the interest to make an initiative happen but respect the independent identity of an initiative (Hufen & Koppenjan, 2015). The facilitative role is the most frequently used in the literature as it requires limited capacity and resources of local and regional governments.

Rung 3: Stimulating

The stimulating role of the government refers to practices that stimulate the initiation and continuation of initiatives (Mees et al., 2019). The literature review indicated that in stimulating CRE initiatives, financial support through loans and subsidies is the most common way of support (Silva & Horlings, 2020; van der Waal et al., 2020; Wang et al, 2017; Warbroek, et al., 2018). According to Boer et al. (2018), subsidies are the main tool for governments to foster the emergence of CRE initiatives. Several local and regional governments have structural subsidy programmes in place to support CRE initiatives. In addition, local and regional governments stimulate initiatives by for example conducting technical feasibility studies (Beermann & Tews, 2017), provide physical space for an initiative (Warbroek & Hoppe, 2017) and, granting legal permits (Wang et al, 2017). The practices in the stimulating role are in general structural and offered over a longer period.

Rung 4: Network Steering

The network steering role refers to practices where local governments keep an overview of all the initiatives and bring them together in a network. In this network, the decisions are co-decided between the government and the initiatives (Mees et al., 2019). The literature shows that there are examples of local governments creating a network with CRE initiatives (Hoppe et al., 2015; Koirala et al., 2016). In these networks, initiatives and governments can learn from each other and can advocate for new policy schemes on higher government levels (Mey et al., 2016). Also, there is an example where an initiative enters into a partnership with the local government (Hicks & Ison, 2018), or the local government becomes a co-owner of an initiative (Warbroek & Hoppe, 2017). In comparison with the facilitating and stimulating role, practices in the network steering role are less common in the literature.

Rung 5: regulating

The regulating role of the government refers to the hierarchical government that regulates, decides, and sanctions in case of noncompliance (Mees et al., 2019). The most common regulating practices are policies and regulations targeting CRE initiatives (Hoppe et al., 2015; Pinker et al., 2020; Seyfang et al., 2013), such as adapting spatial planning programs (Warbroek & Hoppe, 2017). As CRE initiatives work in the institutional context of local and regional governments, regulations and policies influence the daily activities of CRE initiatives. However, regulations and policies not only constrain initiatives but can also enable their development (Pinker et al., 2020). Reviewing all regulations targeting CRE initiatives is beyond the scope of this study. Therefore, the traditional regulating role is not discussed in detail.

To conclude, in the following chapters the empirical research explores the current roles and practices of the local and regional government in supporting CRE initiatives. In the discussion, the results of the literature review were compared with the empirical findings.

3. Methods

In this explorative research, the case study strategy is selected to analyse the role of local and regional governments in supporting CRE initiatives. Case study analysis is a useful method to obtain an in-depth understanding of a phenomenon in its real-life context (Yin, 2009). An advantage of the method is the high degree of conceptual validity, which is not the case in more statistical research (George & Bennett, 2005). Case study research is in particular suitable to examine the involvement of local governments in sustainability issues (Stewart, 2012).

Conducting a multiple case study enhances the research because *“the second case offers the possibility of responding to a frequent complaint against single case studies that the case was aberrant in some undesirable manner”* (Yin, 2009, p. 258). In this research, a multiple case design is selected to predict similar results (Yin, 2009) between the local governments of The Hague and Rotterdam in supporting CRE initiatives. By selecting two cases, there is more emphasis on the comparison between the cases (Verschuren & Doorewaard, 2010). The reason for carrying out a comparative analysis is to discover patterns of similarities and differences in the data (Pickvance, 2001).

3.1 Case study design

This comprehensive case study is performed by using an embedded multiple case design (Figure 2). The aim is to explore the role of local governments in similar contexts in different types of CRE initiatives. Accordingly, the most similar case design is selected (Seawright & Gerring, 2008). In this design, there is a maximum variation on the independent variable because the roles of the two municipalities and provinces are examined in different types and phases of initiatives. By selecting two comparable cases the effects of other factors influencing the role of the local and regional government in supporting CRE initiatives are minimised (Burnham et al., 2008). The similarities between the selected cases focus on the government structure, legal authority, support to CRE initiatives, and population size.

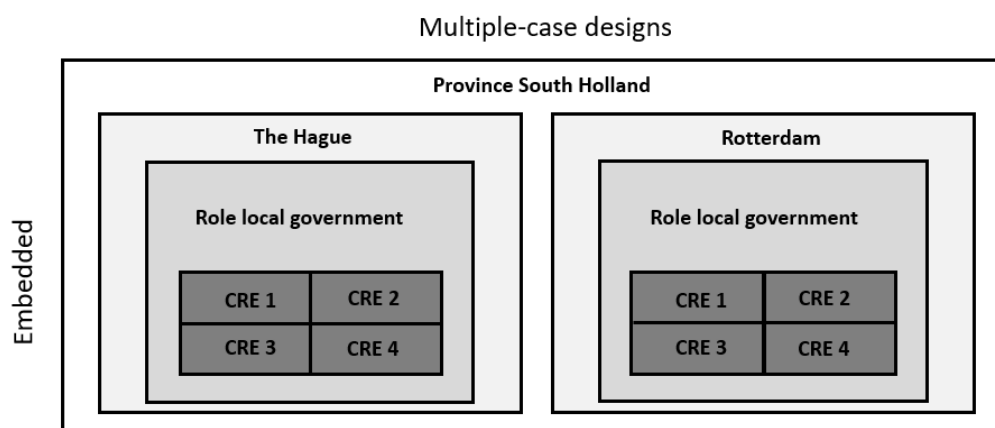


Figure 2. Case study design adapted from Yin (2009)

3.2 Case selection

In this research, the cases were selected in line with the strategic selection method (Flyvbjerg, 2006), to minimise the differences in context between the cases (Stewart, 2012). In the Netherlands, the Province of South Holland was selected as the study area for the regional level. South Holland is with 70 different initiatives, the province with the most CRE initiatives in the Netherlands (HIER Opgewekt,

2021), and active in supporting CRE initiatives by providing subsidies, organising knowledge networks, and facilitating pilot projects (Provincie Zuid-Holland, 2021). The regional focus was chosen because of the decisive role that provinces and municipalities play in the energy transition (Bulkeley, 2010; Hoppe & Miedema, 2020). The regional level has become even more important with the advent of the Regional Energy Strategies (RES). In 30 different energy regions, local governments and stakeholders have to explore the availability of heat sources and locations for renewable electricity generation (Klimaataakkoord, 2019). The province and municipality have varying roles in dealing with CRE initiatives. Therefore, in addition to the role of the province, the roles of the two Municipalities of The Hague and Rotterdam have been explored.

The Municipalities of The Hague and Rotterdam were selected as they are both located in the Province of South Holland, RES-Region Rotterdam-Den Haag, and have a comparable population size (Table 2). Moreover, both municipalities acknowledge the pivotal role that CREs play in the energy transition and actively support CREs. The Municipality of Rotterdam aims to increase social acceptance towards the energy transition by supporting citizen initiatives. According to the ‘Energy Transition report 2019-2020’, the municipality supports CRE initiatives by providing advice, subsidies, and financing through affordable loans (Gemeente Rotterdam, 2019). In October 2020, the municipality and local energy cooperatives signed a climate deal to realise 90 new collective solar roofs within five years. The intermediary organisation ‘Energie van Rotterdam’ was founded to coordinate the collaboration between the local energy cooperatives and the municipality (HIER Opgewekt, 2020). The Municipality of The Hague, states that the energy transition can only be a success in collaboration with citizen initiatives (Gemeente Den Haag, 2018). The municipality supports CRE initiatives with subsidies, online consultation hours, and assistance in permit applications (Gemeente Den Haag, 2021). The municipality frequently works together with an intermediary organisation, ‘Duurzaam Den Haag’, in supporting bottom-up initiatives (Gemeente Den Haag, 2018). For these reasons, the Province of South Holland, the Municipality of The Hague, and the Municipality of Rotterdam were selected to gain a more in-depth understanding of the role of the local and regional governments in supporting CRE initiatives.

Table 2. selection criteria case studies

Case selection	Province	RES -region	Population	Government structure	CREs present ¹
The Hague	South Holland	Rotterdam-Den Haag	539.040	Municipal council	10
Rotterdam	South Holland	Rotterdam-Den Haag	651.164	Municipal council	5

¹ Number of CRE initiatives according to the database of HIER Opgewekt (2020)

The sample of CRE initiatives is based on the database of the ‘Local Energy Monitor 2020’ (in Dutch: Lokale Energie Monitor 2020) (HIER Opgewekt, 2020). The database is applicable for this research because the selection criteria of HIER Opgewekt are in line with the used definition in the research of CRE initiatives of Bauwens (2016). Table 3 presents the selection criteria of the initiatives.

Table 3. Selection criteria initiatives adapted from *HIER Opgewekt* (2020, p. 29)

Type of activities	<ul style="list-style-type: none"> • Collective solar projects • Collective wind projects • Heat projects • Energy conservation • Energy supply • Mobility • Innovative projects such as the use of hydrogen and energy storage
Geographical	Community focus <ul style="list-style-type: none"> • District, village, town, or region

All CRE initiatives in The Hague (10) and Rotterdam (5) were included in the research to create a maximum potential variation on the roles of the local government, so as to get a comprehensive overview of the roles of local governments in different types and phases of initiatives. However, one initiative in The Hague did not respond to the interview invitation. The total sample of CRE initiatives (14) and intermediary organisations (2) are presented in Appendix A.

The municipal and provincial officials were selected in consultation with an official of the Province of South Holland. During the interviews, governmental officials were added by means of snowball sampling (Verschuren & Doorewaard, 2010). The selected governmental officials are responsible for offering support to CRE initiatives and work at different levels in the local and regional government. In addition to the officials, three experts were selected to validate the results and evaluate the generalisability of the findings. The experts were selected based on their expert knowledge on the role of governments in supporting CRE initiatives. The selected experts are dr. Thomas Hoppe, Ruud Schuurs and Anne Marieke Schwenke. First, dr. Thomas Hoppe is an associate professor at the TU Delft. His research focuses on the governance of energy transitions and he has published multiple articles about the role of the local and regional government in supporting CRE initiatives. Second, Ruud Schuurs is a former employee of the Province of South Holland and currently an independent consultant on organisational development, strategic advice, leadership development, and coaching for organisations striving for sustainable development. Also, Schuurs is supervising a Community of Practice for the Regional Energy Strategies (RES). Third, Anne Marieke Schwenke is an independent researcher specialised in energy transitions. The main focus of her research is on the role of citizens and the way they operate in the energy market. Moreover, Schwenke is the author of the annual published Local Energy Monitor (in dutch: Lokale Energie Monitor) of *HIER Opgewekt*. The selected municipal officials (5), provincial officials (4), and experts (3) are presented in Appendix B.

3.3 Data collection

To identify the roles of local and regional governments in supporting CRE initiatives, the data collection is based on qualitative methods. In case study research, triangulation of methods improves the reliability of the results (Verschuren & Doorewaard, 2010). The main method of this research contains 28 semi-structured interviews with CRE initiatives representatives (14), intermediary organisations representatives (2), municipal officials (5), provincial officials (4), and experts (3). An overview of the number of interviewees per case is presented in Table 4.

Table 4. Overview interviewees per case study

	Municipality of The Hague	Municipality of Rotterdam	Province of South Holland	Total
CRE initiatives	9	5	-	14
Intermediary organisations	1	1	-	2
Officials	3	2	4	9

As input to the interviews, policy documents, websites, and online articles were analysed. In addition, online RES meetings of the province South Holland were attended. The observations served as input for the interviews with the provincial officials. In the participatory observation method, the researcher studies people in a ‘natural setting’ to understand the conditions from their perspective (Baker, 2006). The analysis of the secondary data and observations served as input for the interviews and were used to complement the results.

The respondents were contacted by email (Appendix C) and the interviews were conducted online in Microsoft Teams due to the Covid-19 regulations in the Netherlands. At the beginning of the interviews, the respondents were asked to give informed consent and permission to record the interview. Moreover, the interviews were semi-structured to allow discussion with the interviewee. The interview guides have been included in Appendix D and E. All the questions were asked to ensure that the results of the respondents were comparable (Verschuren & Doorewaard, 2010). The interviews with the representatives of the CRE initiatives and intermediary organisations were structured according to the sub-questions: (2) roles and practices local and regional governments, (3) barriers perspective CRE initiatives and intermediary organisations, (4) barriers perspective government officials, and (5) ideal roles of the local and regional government. During the interviews with the governmental officials, the same structure was used, but the ideal roles of the local and regional government were asked by presenting the analytical framework of this research.

At the beginning of the research, the representatives of the two intermediary organisations ‘Duurzaam Den Haag’ and ‘Energie van Rotterdam’ were interviewed to obtain a better understanding of the CRE initiatives in the municipalities. Various studies have shown that intermediaries are key players in capacity building and knowledge exchange for CRE initiatives and can function as a broker between CRE initiatives and the government (Ruggiero, 2014; Warbroek et al., 2018). However, as this research focuses on the role of the government, analysing the stand-alone role of the intermediaries in supporting CRE initiatives is beyond the scope of this research.

3.4 Data analysis

The data analysis consisted of a mixture of deductive and inductive methods. As opposed to the grounded theory method, where theoretical insights are gained by finding patterns in the data with a minimum of prior knowledge (Verschuren & Doorewaard, 2010), in this research the analytical framework was used to guide the data analysis. In analysing sub-questions 2 and 5, the framework was used to structure the data and assess whether the practices of the local and regional government corresponded with the scientific literature (deductive). In sub-question 3 and 4, the barriers were identified by finding patterns in the data (inductive) (Verschuren & Doorewaard, 2010).

The Interviews were transcribed and analysed in NVIVO. NVIVO is a qualitative data analysis software program to structure the data with codes (Hilal & Alabri, 2013). First, case nodes were created based

on the different groups of actors (i.e. Rotterdam/The Hague Initiatives, Rotterdam/The Hague government, and South Holland government). In the first stage of open coding, nodes were divided according to the concepts in the sub-questions. The supportive practices of the local and regional governments were structured based on the different roles in the analytical framework (sub-question 2 and 5). Moreover, the barriers were structured by generating nodes from the interviews (sub-question 1). In the second stage, axial coding was applied to draw connections and relationships between the codes. To create a clear overview, the different codes were grouped in parental and child nodes. In addition, memos were used to write down new ideas. The coding scheme is presented in Appendix F.

After analysing the data in NVIVO, the results were interpreted. The results were presented in four sections: Municipality of The Hague, Municipality of Rotterdam, Province of South Holland, and the comparative analysis. The structure within the chapters is the same: roles and practices of the government, barriers of the perspective of CRE initiatives and intermediary organisations, barriers of the perspective of the local and regional government, and the ideal roles of the local and regional government. The relevance of the practices, barriers, and ideal roles was determined by the frequency they were mentioned in the interviews. In the comparative analysis, the results were compared in three ways, between the municipalities, between the municipalities and the province, and between the theory and empirical findings.

4. Case study: Municipality of The Hague

This chapter presents an overview of the results from the case study of the Municipality of The Hague. First, the CRE initiatives and intermediary organisation are introduced in section 4.1. Second, the roles and practices of the Municipality of The Hague in supporting CRE initiatives are presented in section 4.2. Third, the barriers that CRE initiatives and the intermediary organisation face in the interaction with the local and regional government are discussed in section 4.3. The barriers the municipal officials face when performing their role in supporting CRE initiatives are presented in section 4.4. Subsequently, the ideal roles of the local and regional government in supporting CRE initiatives are discussed from the perspective of the CRE initiatives representatives, the intermediary organisation representative, and municipal officials in sections 4.5 and 4.6. Finally, the conclusion of this chapter is presented in section 4.7.

4.1 CRE initiatives in the Municipality of The Hague

In the Municipality of The Hague, one intermediary organisation representative and nine CRE initiatives representatives were interviewed. The geographical location of the nine active initiatives within the Municipality of The Hague is shown in Figure 3. Most initiatives in The Hague are operational in the mature phase or exploring additional new services in the upscaling phase. As discussed in section 2.2 the initiatives are classified according to their phase and main type of activities: collective solar projects and/or heat projects. Table 5 gives an overview of the characteristics of the intermediary organisation and the CRE initiatives in The Hague.

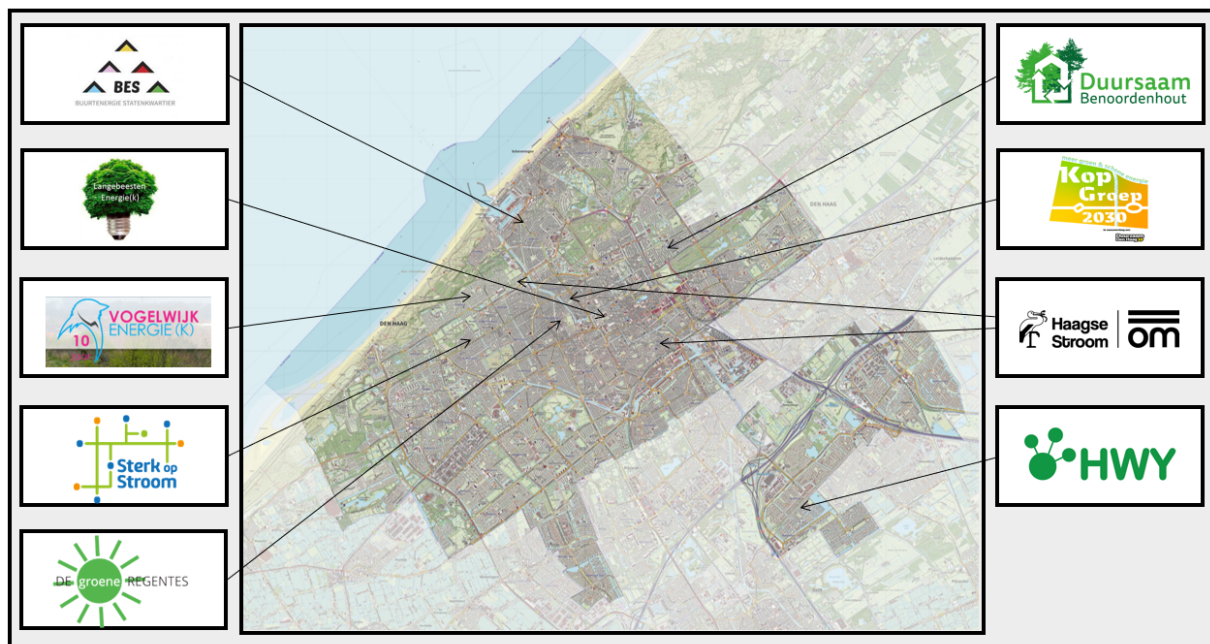


Figure 3. Map of CRE initiatives in the Municipality of The Hague (modified from Gemeentenatlas, 2021)

Table 5. Overview of CRE initiatives and the intermediary organisation in the Municipality of The Hague

Name	Neighbourhood	Founding year	Phase	Type	Activities
Duurzaam Den Haag (Foundation)	Intermediary organisation	2013	Upscaling	-	Supporting citizen initiatives in The Hague in collaboration with the municipality.
Coöperatie Langebeesten Energie(k)	wijk Langebeesten	2015	Upscaling	Collective solar projects and heat projects	<ul style="list-style-type: none"> • One collective solar roofs • Planning to generate energy from a greenhouse • Research on the heat transition
Groen Regentes/ Coöperatie Haags Opgewekt U.A./ Coöperatie Zon der Gaslaan	wijk regentes	2012	Upscaling	Collective solar projects and heat projects	<ul style="list-style-type: none"> • Two collective solar roofs • Collective purchase of solar panels • Energy coaches • Research on energy supply in collaboration with Kopgroep2030 and Duurzaam Den Haag • Electric carsharing
Vereniging Buurtenergie Statenkwartier (BES)	wijk Statenkwartier	2013	Upscaling	Collective solar projects and heat projects	<ul style="list-style-type: none"> • Two collective solar roofs • Collective purchase of solar panels Energy coaches • Research on different scenario's heat transition.
Vogelwijk Energie(k) (Vereniging)/ Zonnevogel Coöperatie (projectcoop)	wijk Vogelwijk	2009	Mature	Collective solar projects and heat projects	<ul style="list-style-type: none"> • Two collective solar roofs • Energy advice • Insulation of houses • Research to phase out gas in the neighbourhood • Electric carsharing
Energie coöperatie Sterk op Stroom	Vruchtenbuurt	2014	Growing	Heat projects	<ul style="list-style-type: none"> • Research on implementing a smart grid in the neighbourhood • 33 energy-neutral houses
Kopgroep2030	Koningsplein en Regentesseplein en omgeving	2019	Growing	Heat projects	<ul style="list-style-type: none"> • Drafting a heat plan for the neighbourhood
Duursaam Benoordenhout	Benoordenhout	2018	Mature	Heat projects	<ul style="list-style-type: none"> • Advice energy saving, • Collective purchase of solar panels

					<ul style="list-style-type: none"> • Drafting a district energy plan to phase out gas • Energy coaches
Hernieuwbare Warmte Ypenburg	Ypenburg	2016	Growing	Heat projects	<ul style="list-style-type: none"> • Research heat transition; experiments heat network • Collective purchase of solar panels • Energy-saving/advice, • Planning to generate energy with collective solar roofs in collaboration with Haags Opgewekt
Haagse Stroom Cooperatieve Vereniging (Founded from 070Energiek)	Stationsbuurt and Bomenbuurt	2018	Mature	Collective solar projects	<ul style="list-style-type: none"> • One collective solar roof • Research on solar carport and smart grid

4.1.2 Intermediary organisation: Duurzaam Den Haag

The intermediary organisation Duurzaam Den Haag, is an independent foundation but was co-founded by the municipality in 2013. Duurzaam Den Haag aims to connect the world of governments, institutions, and funders to the world of residents and entrepreneurs (Duurzaam Den Haag, 2018). According to a representative of Duurzaam Den Haag *“It is a kind of intermediary role connecting more bottom-up initiatives with more systemic top-down processes and parties”* (respondent H7). For the most part, Duurzaam Den Haag is financed by the Municipality of The Hague. The foundation has a limited budget to support the initiatives financially. Therefore, the most common support is advice about insulation, solar panels, and organising (network) events. According to a representative of Duurzaam Den Haag, the foundation especially plays a role in supporting initiatives in the initial phase. A municipal official expressed that although Duurzaam Den Haag is an independent organisation, their activities are closely linked with the activities of the municipality. The Department of Sustainability often gives instructions to Duurzaam Den Haag and all their activities are aligned. However, according to a municipal official, Duurzaam Den Haag should maintain an autonomous and independent role to prevent becoming too much of a partner of the municipality.

Practices of Duurzaam Den Haag

According to interviewees, the role of Duurzaam Den Haag is to act as a bridge between the different initiatives and to function as a **contact point** for the province and the municipality. The foundation supports CRE initiatives with **knowledge, advice, and network events**. Every five weeks Duurzaam Den Haag hosts the **working group** sustainable heat (in Dutch: werkgroep duurzame haagse warmte). In the working group, initiatives can share knowledge, experiences and discuss solutions to phase out gas in their neighbourhood. In addition, experts are invited to give presentations on relevant topics of the energy transition. Interviewees argue that **knowledge exchange** between the CRE initiatives is the main function of Duurzaam Den Haag. A respondent argues that *“Duurzaam Den Haag is seeking for knowledge from initiatives just as much as we are seeking for knowledge from them”* (respondent H6). Among the respondents, six initiatives are a member of the working group sustainable heat. To date,

Duurzaam Den Haag is with the working group mostly focused on heat projects. Interviewees expressed that also an intermediary organisation for energy cooperatives should be established to develop a more standardised approach for collective solar projects.

To conclude, the main focus of Duurzaam Den Haag is to **facilitate** (rung 2) new initiatives with knowledge, advice, and organising events. In addition, Duurzaam Den Haag stimulates knowledge exchange between the initiatives in the working group sustainable heat. Due to the limited financial resources of Duurzaam Den Haag, initiatives do not receive structural financial support.

4.2 Roles and practices: Municipality of The Hague

This section presents the roles and practices the Municipality of The Hague fulfils in supporting CRE initiatives. The primary data of the interviews were complemented with secondary data (i.e. policy documents and government websites). The different practices of the municipality have been classified according to the roles of the analytical framework presented in section 2.3.

Rung 1: Letting go

All the interviewed CRE initiative representatives indicated that their initiative received support from the Municipality of The Hague. Moreover, to keep control over the energy transition the municipality monitors the progress of the initiatives (Gemeente Den Haag, 2021). Hence, the role of letting go is not applicable in the Municipality of The Hague.

Rung 2: Facilitating/enabling

The Municipality of the Hague facilitates citizen initiatives to achieve faster and better results in the energy transition (Gemeente Den Haag, 2019). The municipality facilitates the initiatives with the following practices:

Provide advice and expertise

The Municipality of The Hague has an **online information portal** on its website (see <https://duurzamestad.denhaag.nl/in-de-wijken/>) with information for citizen initiatives performing activities related to the energy transition (Gemeente Den Haag, 2021). In addition, every month the municipality organises an **online consultation hour** for citizen initiatives with the councillor on subjects related to the energy transition or sustainable neighbourhood initiatives (Gemeente Den Haag, 2021). Moreover, the Municipality of The Hague **provides personal advice and expertise** on setting up CRE initiatives, communication strategies, installing collective solar roofs, and technical questions. A respondent indicated that they *“are in contact with two employees of the municipality, also on technical questions”* (respondent H10). Finally, the Department of Sustainability also links initiatives to other programs within the municipality.

Organise information meetings

The Municipality organises different Information meetings and presentations on topics of the energy transition. The meetings are announced on the website of the Municipality of The Hague. Several initiative representatives indicated that they had attended information meetings.

Legal and regulatory support

The Department of Sustainability supports initiatives with the application for permits. However, the municipality is planning to establish permanent contact points for support in the permit applications for local sustainable initiatives. In this way, initiatives can better find their way within the municipal organisation (Gemeente Den Haag, 2021).

Media attention for initiatives

The website of 'Duurzame Stad Den Haag' (see <https://duurzamestad.denhaag.nl/>) is used as a platform for initiatives to promote themselves. The initiatives can apply to promote their initiative by filling in a contact form on the website (Duurzame Stad Den Haag, 2021).

Rung 3: Stimulating

The Municipality of The Hague stimulates local energy initiatives when necessary. This support is often in the form of subsidies (Gemeente Den Haag, 2019). The municipality stimulates the initiatives with the following practices:

Financial support

In The Hague, a subsidy is the most common way of direct support. Most of the CRE initiatives received a **start subsidy** of €5000. Moreover, the municipality provides financial support to conduct **technical feasibility studies** and to organise small-scale activities and events. Furthermore, every year the Municipality of the Hague organises a **prize competition**: The Neighbourhood Energy Challenge (in Dutch: Energie uit de Wijk Challenge). In this competition, €500.000 is divided among the winners. Several CRE initiatives in The Hague participated in this challenge and won prize money. The winners received financial support and customised assistance, with knowledge and experience from inside and outside the municipality (Gemeente Den Haag, 2021). One interviewee expressed *"they participated in the energy challenge and received €60.000 to recruit members and obtain more roofs"* (respondent H9). Finally, the municipality is in the process of establishing the Neighbourhood Initiatives Fund (in Dutch: Wijkinitiatievenfonds). With this fund, the municipality aims to support promising local energy initiatives by developing a financially viable business case (Gemeente Den Haag, 2021).

Provide roofs for collective solar projects

In The Hague, the municipality offered roofs to some CRE initiatives to install solar panels. A respondent expressed that *"the two collective solar roofs we have, are provided by the municipality, so in that sense, we are well supported"* (respondent H2). However, there is also criticism of the initiatives that too few roofs are made available. The Municipality of The Hague launched the year 2021 as the 'year of the roof'. In one year they want to establish as many solar and green roofs as possible. On the website of this campaign (see <https://duurzamestad.denhaag.nl/jaarvanhetdak/>), the municipality provides advice on subsidies and permit applications (Duurzame Stad Den Haag, 2021).

Working group (hosted by Duurzaam Den Haag)

On behalf of the Municipality of The Hague, Duurzaam Den Haag organises the Working Group Sustainable Heat (in Dutch: Werkgroep Duurzame Haagse Warmte). In the working group, initiatives can share knowledge, experiences and discuss solutions to phase out gas in their neighbourhood. Also, external experts are invited to give presentations. The working group is organised every five weeks. An

interviewee expressed that *“In the working group, we are very well informed of the developments in the energy transition by the municipality”* (respondent H5).

Training of energy coaches (in collaboration with Duurzaam Den Haag)

In collaboration with Duurzaam Den Haag and Hoom (a national organisation that supports local initiatives in the energy transition), the municipality provides training for energy coaches. Three members of the interviewed initiatives have participated in this training. Currently, the municipality is in collaboration with Duurzaam Den Haag working to further professionalise this approach.

The municipality as consumer energy cooperation

In The Hague, the municipality is a customer of the initiative Haagse Stroom, for 10% of its electricity. Haagse Stroom is part of the national energy collective 'OM Nieuwe Energie'.

Visiting meetings initiative

In The Hague, governmental officials visited meetings of initiatives to share and obtain information. An interviewee expressed that *“the municipality visit our meetings twice per year to share information”* (respondent H1).

Granting legal permits

The Municipality in The Hague granted legal permits to initiatives for installing collective solar roofs. Moreover, the municipality granted environmental permits to an initiative to install a geothermal heat pump system.

Rung 4: Network steering

The Municipality of The Hague takes the lead when necessary and ensures a joint approach with other actors in the energy transition (Gemeente Den Haag, 2019). The municipality performs the network steering role in the following practice:

A partnership between a CRE initiative and the municipality

The Municipality of The Hague signed in collaboration with Eneco a declaration of cooperation with Hernieuwbare Warmte Ypenburg (HWY). In this way, the collaboration between HWY and the municipality is formalised. The initiative representative argues that *“since the cooperation is formalised, we are an official party to the municipality and that makes a big difference. Through the agreement, there is more trust and we can learn from each other”* (respondent H10).

Rung 5: Regulating

The Municipality of The Hague regulates initiatives with policies and regulations (Gemeente Den Haag, 2019). The municipality regulates the initiatives with the following practices:

Policies and regulations

The Municipality of The Hague regulates the energy transition and CRE initiatives with **policies** and **regulations**. According to a governmental official, the municipality has the political responsibility for the energy transition. *“The municipality can make laws, but you need residents and market players to make a difference”* (respondent HM2). In the ‘Programme Sustainability 2021’ and ‘Programme Energy Transition’ the practices that are offered and the changing role of the municipality towards citizen

initiatives are described (Gemeente Den Haag, 2021; Gemeente Den Haag, 2018). However, the role of CRE initiatives in the energy transition is not further specified. This study will not address the specific policies and regulations in detail.

To conclude, the Municipality of The Hague supports the initiatives primarily in the facilitating and stimulating role. In the facilitative role, the initiatives receive advice, expertise, and media attention. It is noteworthy that in stimulating initiatives, many different practices are performed by the Municipality of The Hague. Besides a start subsidy, the municipality organises an annual prize competition and training for energy coaches. Table 6, presents a summary of the roles and practices of the Municipality of The Hague in supporting CRE initiatives.

Table 6. Overview roles and practices of the Municipality of The Hague

Rung	Roles for local governments	Practices Municipality of The Hague
5	Regulating	<ul style="list-style-type: none"> - Regulations - Policies
4	Network steering	<ul style="list-style-type: none"> - A partnership between a CRE initiative and the municipality
3	Stimulating	<ul style="list-style-type: none"> - Subsidy - Technical feasibility studies - Prize competition - Provide roofs for collective solar projects - Organise a working group - The municipality as consumer energy cooperation - Visiting meetings initiative - Granting legal permits - Training energy coaches
2	Facilitating/ enabling	<ul style="list-style-type: none"> - Provide personal advice and expertise - Online information portal - Online consultation hour Councillor - Organise information meetings - Legal and regulatory support - Media attention for initiatives
1	Letting go	<ul style="list-style-type: none"> - Absent

4.2.1 Type and phase

The previous section discussed the type of roles and the practices the municipality fulfils in supporting CRE initiatives. This section presents to what extent these roles and practices change for different types and phases of CRE initiatives in The Hague.

As presented in Table 5 the initiatives in The Hague perform various types of activities. To compare the initiatives, they have been classified on their main activities, initiatives performing collective solar projects and/or heat projects. The phase of the initiative has been determined based on a question in the interviews. Based on the interviews most practices of the municipality were similar per type and phase of the initiatives. However, a few important differences were identified. First, in the facilitative practices (i.e. providing expertise and advice, legal and regulatory support, online information portal, and media attention) no differences between the type and/or phase of the initiatives were found.

Second, in the stimulating role, with the (start-up) subsidy of the municipality, no differences between the type and phase of the initiatives were observed. However, the practice of offering roofs is logically only for the initiatives in the type collective solar projects. As well as, the working group is only intended for the initiatives in the type heat projects. The prize competition is open for initiatives with activities regarding the generation of renewable energy, energy-saving, and solutions for the heat transition (Gemeente Den Haag, 2021). Therefore, initiatives in both types of activities can participate in the competition. The winners of the interviewed initiatives are in the mature and upscaling phase. This may imply that initiatives in the mature phase are more likely to win the competition. Furthermore, technical feasibility studies are performed to explore potential heat networks and the suitability of roofs to install a collective solar project. Thus, again no distinction can be made between the different types of initiatives. Third, in the network steering role the municipality signed a declaration to cooperate with the initiative *Hernieuwbare Warmte Ypenburg*. This may imply that the municipality is prepared to collaborate with initiatives that work on heat projects. Heat projects generally require more cooperation between the municipality and the initiative because the plans affect the (heat) infrastructure in the neighbourhood. Finally, the regulations and policies apply to both types of initiatives.

To conclude, the analysis indicates no significant differences between the kind of support of the municipality in different types and phases of the initiatives. This result is in line with the lack of policy of the Municipality of The Hague in supporting citizen initiatives. Currently, no policy is in place that differentiates between different types and phases of a CRE initiative. An official expressed that *“As a municipality, you just want to have a policy on how to deal with citizen initiatives and there is no such policy yet”* (respondent HM2). However, with the start-up subsidy, extra attention is paid to the support of new initiatives. According to a municipal official, the Municipality of The Hague is in the process of developing policy on providing support based on the type and phase of an initiative. Besides policy, the municipality is planning to provide more customised support through the ‘Sustainable Initiatives Consultation’ (in Dutch: *Duurzaam Initiatieven Overleg*). In this consultation, officials have to consider the most effective type of support per initiative.

4.3 Barriers: perspective CRE initiatives and intermediary organisation

This section presents the barriers CRE initiatives and the intermediary organisation face in the interaction with the local government. In addition, the responses of the municipal officials to the five most frequently mentioned barriers are discussed to identify the challenges of the municipality.

4.3.1 Lack of participation and communication

In The Hague, the initiatives are dissatisfied with the level of participation. The feeling prevails that the municipality wants to control and do everything by itself. An interviewee mentioned that *“the municipality avoids conversations and confrontations with residents and initiatives”* (respondent H5). If the municipality organises participation it is often too late. The municipality first drafts the plans for the neighbourhoods and when the plans are finished, they involve the residents. *“They are always too late, and this happens over and over again. And I don't see any improvement at all”* (respondent H2). Interviewees expressed that the municipality should involve residents at an early stage when developing plans for their neighbourhood. To date, the municipality is still reluctant to see citizen organisations as partners.

Moreover, interviewees express that the municipality should be more transparent about important strategic decisions. An example is the planning of the project: 'Pipeline through the Middle' (in Dutch: Leiding door het Midden). This is heating infrastructure from the port of Rotterdam to The Hague, to replace the use of natural gas. Among the initiatives, there is resistance to this plan because it stops the development of local sustainable heat sources. An interviewee expressed that *"The municipality fully supports this plan but there is no transparency about how far the process is, and what has been decided"* (respondent H8).

Responses officials to the barriers that explain the challenges of the municipality

Municipal officials of The Hague recognise the lack of participation of initiatives in the plans of the municipality. According to municipal officials, the municipality is in the process of improving citizen participation in the policy process. However, an official argues that in some cases it is difficult to arrange participation because each initiative has different opinions and some projects need to be implemented rapidly. Moreover, an official expressed that *"there will always be the perception that as municipality you are not doing it well enough"* (respondent HM3). The municipality listens to the initiatives in the working group sustainable heat (in Dutch: werkgroep duurzame haagse warmte). To arrange better citizen participation, the energy transition team needs more resources and capacity. An official argues that the challenge is to get the internal organisation on board. *"A lot of government officials, still see participation as something to be ticked off"* (respondent HM2). The challenge of the municipality is to improve the participation of CRE initiatives in drafting neighbourhood plans. To achieve this, the energy transition team needs more capacity and resources and the internal municipal organisation should acknowledge the value of citizen participation.

4.3.2 Lack of vision and focus on results

The Municipality of The Hague is criticised for not having a comprehensive vision on sustainability and a lack of focus on achieving results, the reduction of CO₂ emissions. An interviewee expressed that the municipality is not prepared to choose a certain direction in the energy transition. *"Simply put, a lot of energy is needed to phase out gas and no real choices are being made about where to start"* (respondent H1). In addition, respondents mentioned that no one in the municipality is willing to take responsibility. *"The municipality is not interested in the results and solutions, but the civil servants want to make sure they keep their own desk clean"* (respondent H4).

Moreover, some respondents have the feeling that the focus of the municipality is on promotion and campaigns instead of achieving results. *"The municipality can start a rooftop hunt but if it does not lead to any roofs it doesn't make sense"* (respondent H5). Another example is the new campaign called the 'year of the roof'. According to an interviewee, *"It seems that someone wakes up in the morning and thinks, this is a nice idea, which we are going to implement. And again, residents are confronted with an action they don't know about"* (respondent H4). The respondents are concerned that volunteers will eventually give up if the municipality does not align the various actions and develop a holistic long-term vision. An interviewee states that the municipality only has a short-term tunnel vision on sustainability. *"If the municipality says that a neighbourhood must be gas-free by 2030, that is completely different than saying that the energy supply must be sustainable by 2030 with the use of local sources"* (respondent H8).

Responses officials to the barriers that explain the challenges of the municipality

Government officials of The Hague argue that the multiannual programme Sustainability and Urban Energy Plan (in dutch: Stedelijk Energieplan) contain very clear ambitions on reducing CO2 emissions. However, an official acknowledged that the municipality could align the different projects better. An official expressed that when the municipality has a clearer vision, this also must be communicated to the public. *“We now often communicate policy rather than the underlying goals”* (respondent HM2). The challenge of the municipality is to better align the different projects and improve the communication about the vision on the energy transition.

4.3.3 Bureaucracy (lack of flexibility)

In The Hague, some initiative representatives run into the system world of the municipality. The decision-making process of the municipalities is very slow which leads to frustration among the members of initiatives. An interviewee argues that *“for every two steps you are taking forward with the municipality, you go three steps back”* (respondent H3). Moreover, interviewees are frustrated because the municipality is not able to make enough roofs available to install collective solar projects. *“We got a list of 15 roofs of the municipality to divide between all the initiatives in The Hague, but when we received construction reports of the buildings the roofs were almost all not suitable”* (respondent H9). Also, interviewees expressed that it takes a very long time to receive a response on an application for a building permit. *“It took for the municipality 1.5 years to conclude that we cannot use a certain roof, that is ridiculous. During that time we already lost a lot of energy and enthusiasm”* (respondent H2).

Responses officials to the barriers that explain the challenges of the municipality

An official of the Department of Sustainability in The Hague expressed that they also want to move faster than other departments within the municipality. It takes time to convince other departments to take action on sustainability. Furthermore, the initiatives must understand the political responsibility of the municipality. *“It is often a lack of mutual understanding of each other's worlds”* (respondent HM2). The challenge of the municipality is to put sustainability higher on the agenda of other departments and to increase the understanding of the political world of the municipality among members of CRE initiatives.

4.3.4 Internal alignment

In The Hague, interviewees noticed that the different departments of the municipality often are not aware of each other's activities. Furthermore, the goals and KPIs of the departments are sometimes opposing each other. An interviewee expressed that *“It is a huge waste of taxpayers' money, when the municipality is paying a technical feasibility study for an initiative, while another department already knows that the roof is unsuitable ”* (respondent H9). Another respondent stated that the eleven winners of the Energy Challenge received together €500.000. A lot of these projects fail because there is a lack of internal alignment in the municipality. *“On the one hand, you have civil servants who are concerned with sustainability and they think it's fantastic what we are doing. They also help us, but on the other hand, you have the department responsible for physical real estate and they see sustainability as complicated and are not willing to cooperate”* (respondent H2). Finally, two respondents mention that as a new initiative it is very difficult to know who to contact within the municipality.

Responses officials to the barriers that explain the challenges of the municipality

Government officials expressed that each department of the municipality has its own culture. To solve this problem the municipality started the 'Sustainable Initiatives Consultation' (in Dutch: Duurzaam Initiatieven Overleg) to discuss questions of initiatives with officials from different departments. In addition, every new initiative will receive a contact person from the municipality to avoid confusion. An official expressed that in this way, the municipality wants to support initiatives without having them suffer from all the different departments. The challenge is to improve the Internal alignment of the municipality to enhance the support for CRE initiatives.

4.3.5 Underestimating the expertise and professionalism of the initiatives

Interviewees expressed that the Municipality of The Hague underestimates the expert knowledge and professionalism of the initiatives. According to a respondent, the CRE initiatives would like to be acknowledged as an important actor in the energy transition. A representative states that the knowledge of the members of CRE initiatives together is more than the municipality can have in its energy transition team. *"The municipality underestimates the quality and professionalism of initiatives. We have to prove again and again that we can do it. And then you show it and then the next time you can start all over again"* (respondent H2). Moreover, interviewees argued that the municipality should use the knowledge of initiatives instead of ignoring them.

Responses officials to the barriers that explain the challenges of the municipality

Government officials of The Hague do not have the feeling that they underestimate the expertise of the initiatives. They acknowledge that the initiatives have more technical expertise than the municipality itself. However, the knowledge of the initiatives should be better utilised by increasing the participation of initiatives in drafting neighborhood plans. An official expressed that If an initiative is seen as a professional organisation, then the municipality must deal with the initiative in the same way as a market party. *"If we deal with initiatives as a market actor, I think a financial compensation is justified"* (respondent HM1). The challenge of the municipality is to better utilise the knowledge and expertise of the CRE initiatives.

4.3.6 Ambition is not in line with the support

In the Hague, the municipality has set the goal to be climate neutral in 2030. Most of the respondents think this ambition is not in line with the support CRE initiatives receive. An interviewee expressed that the municipality should *"set a goal that is realistic and achievable and doesn't come up with stories like 'The Hague must be energy neutral by 2030' "* (respondent H4). Respondents argued that the municipality should acknowledge that citizen organisations can help the municipality in reaching their goals and see them as a partner instead of an obstacle.

4.3.7 Lack of resources and capacity

In the Hague, four respondents expressed that the municipality has a lack of financial resources and capacity to take the lead in the energy transition. An interviewee expressed that *"the ambition and the task are so great, while this is not yet matched by the resources that are available at the municipal level"* (respondent H7). Consequently, the municipality should use the capacity of the initiatives to reach its goals.

4.3.8 Lack of knowledge

In the Hague, some initiatives didn't receive support from the municipality in terms of knowledge. According to an interviewee, *"It seems that the municipality is better in communication than having substantive knowledge about the energy transition"* (respondent H5). Respondents have the feeling that there is more knowledge among the initiatives than within the municipality.

4.3.9 Lack of supportive policies

According to interviewees, current policies in The Hague are outdated and do not correspond to current innovations. Supportive policies are necessary for the development of CRE initiatives.

Table 7 presents a summary of the barriers CRE initiatives and the intermediary organisation face in the interaction with the local government and the related challenges of the municipality.

Table 7. Overview barriers perspective CRE initiatives and the intermediary organisation in The Hague

Barriers	Relevance¹	Challenges municipality
Lack of participation and communication	8 / 10	<ul style="list-style-type: none"> • Need more financial resources and capacity to arrange participation • Raise awareness of the value of participation within the municipality
Lack of vision and focus on results	8 / 10	<ul style="list-style-type: none"> • Align different projects • Improve the communication of the municipal vision on the energy transition to the initiatives
Bureaucracy (lack of flexibility)	7 / 10	<ul style="list-style-type: none"> • Increase the mutual understanding of the word of the municipality and the world of citizens • Put sustainability higher on the agenda in other departments
Internal alignment	6 / 10	<ul style="list-style-type: none"> • Improve the internal alignment between the different departments
Underestimating the expertise and professionalism of the initiative	5 / 10	<ul style="list-style-type: none"> • Better utilise the knowledge and expertise of the CRE initiatives • Develop a policy on how to deal with the financial compensation of volunteers
Ambition is not in line with the support	5 / 10	
Lack of resources and capacity	4 / 10	
Lack of knowledge	4 / 10	
Lack of supportive policies	3 / 10	

¹Relevance expressed as the frequency of barriers mentioned by different interviewees

4.4 Barriers: perspective municipal officials

This section presents the barriers officials of the Municipality of The Hague face in supporting CRE initiatives.

4.4.1 Professionalism initiatives

Governmental officials in The Hague expressed that the role of members of initiatives as volunteers and/or professionals is becoming increasingly blurred as some volunteers of the initiatives are also

professionally involved in the energy transition. According to an official the municipality has to work with contracts and tenders if it is dealing with a professional party. *“We can't just favour one party, so we have to abide by those procurement rules”* (respondent HM1). Moreover, an official expressed that it is difficult to deal with the **financial compensation for volunteers**. For this reason, the municipality is planning to develop a policy on how to deal with the financial compensation of volunteers.

4.4.2 Representation neighbourhood

The representation of the initiatives of the residents in their neighbourhood is perceived as a barrier. An official expressed that often initiatives do not represent the entire neighbourhood. Subsequently, the municipality is criticised for supporting one citizen initiative over another. An official expressed that *“In Scheveningen you have Natural Gas Free Scheveningen and now Natural Gas Happy Scheveningen has emerged as a new initiative”* (respondent HM1). The municipality is criticised for not representing all the residents because they select the citizen initiatives they support.

4.4.3 Mistrust between residents and the municipality

An official expressed that the municipality traditionally works with top-down laws and regulations. The role of the local government has to change to be more participative and cooperative with society. Currently, there is mistrust between the residents and the municipality. An official argues that *“the municipal officials have to start the conversation with the residents”* (respondent HM2).

4.4.4 Lack of policies on dealing with citizens initiatives

A municipal official in The Hague perceives a lack of policies on how to support citizen initiatives as a barrier. However, the municipality is currently in the process to develop policies on citizens' initiatives.

4.4.5 Internal alignment municipality

The lack of internal alignment of the municipality is also faced as a barrier by municipal officials. The municipality has to serve various interests in the city. An official gives as an example *“the case of solar panels, were, on the one hand, the city needs to remain attractive but on the other hand, the city needs to become more sustainable”* (respondent HM1). For this reason, officials of the Department of Sustainability experience resistance from other departments within the municipality.

4.4.5 Lack of resources and capacity

An official expressed that to enhance the support on CRE initiatives the energy transition team needs more capacity and resources.

To conclude, Table 8 summarises and matches the barriers of the perspective of the CRE initiatives and the intermediary organisation with the responses of the municipal officials and the barriers from the perspective of the municipal officials. Some interesting patterns can be observed in the barriers from the perspective of the initiatives and the municipal officials. First, the internal alignment of the municipality is perceived as a barrier by both the initiatives and the municipal officials. This can be explained because the Department of Sustainability also suffers from the lack of alignment between departments. Second, to improve the participation of initiatives, officials expressed that they need more capacity and resources. Moreover, the Department of Sustainability should persuade other departments of the value of citizen participation. Third, the professionalism of initiatives is by both the initiatives and the officials perceived as a barrier. The initiative representatives feel that their expertise

and knowledge are underestimated by the municipality. And the officials find it difficult to consider an initiative with volunteers as a professional party because then the same tendering rules apply as for companies. The municipality is still exploring how to deal with the financial compensation of volunteers. Fourth, the interviewees' impression that there is no clear vision of the municipality may be related to a lack of policy on supporting citizen initiatives. The municipality can overcome this barrier by developing policies and communicate them to the initiatives. Finally, the barrier mistrust between the residents and the municipality may be partly caused by the perceived lack of flexibility (bureaucracy) of the municipality. The municipality and initiatives need to improve mutual understanding of each other's worlds by starting a dialogue.

Table 8. Matching the barriers of CRE initiatives with the barriers of the municipal officials

Barriers CRE initiatives	Challenges	Barriers Municipal officials
Internal alignment	Improve the internal alignment of the different departments	Internal alignment municipality
Lack of participation and communication	Need more resources and capacity to arrange participation	Lack of resources and capacity
	Raise awareness of the value of participation within the municipality	
Underestimating the expertise and professionalism of the initiative	Better utilise the knowledge and expertise of the CRE initiatives	Professionalism initiatives
	Develop a policy on how to deal with financial compensation of volunteers	
Lack of vision and focus on results	Align different projects	Lack of policies on dealing with citizens initiatives
	Improve the communication of the municipal vision on the energy transition to the initiatives	
Bureaucracy (lack of flexibility)	Put sustainability higher on the agenda of the different departments.	Mistrust between residents and the municipality
	Increase the understanding of the political world of the municipality among members of CRE initiatives.	

4.5 Ideal roles local and regional government: perspective CRE initiatives

This section presents the ideal roles of the local and regional government in supporting CRE initiatives as described in the words of the CRE initiative and intermediary organisation representatives in The Hague.

4.4.1 Equal partners (co-creation)

According to interviewees, the municipality should not only inform and consolidate initiatives but let them participate in the policy process as equal partners. First of all, government officials should start by listening to initiatives and not underestimating their expertise. The local and regional government must ensure that knowledge is shared in an open ongoing dialogue with the initiatives. An interviewee expressed that the government can learn a great deal from the initiatives in The Hague. According to an interviewee, a solution for more co-creation between initiatives and the municipality is to formalise the collaboration in a 'declaration to cooperate'. *"This way we can learn from each other and we stay independent as initiative"* (respondent H10).

4.4.2 Facilitation and stimulation

Interviewees stated that the ideal government supports CRE initiatives with subsidies, roofs, and supportive policies. Several respondents highlighted that the municipality should provide more roofs to install collective solar projects. Furthermore, the representative of the intermediary in The Hague expressed that the municipality must create the preconditions for initiatives to develop themselves.

4.4.3 Take the lead (heat transition)

As the heat transition is a large-scale and complex task, some interviewees in The Hague prefer a leading role of the local and regional government. A respondent expressed that the municipality should take control but include citizens in their decision-making processes. Moreover, initiatives can be used as a sounding board for decisions in the neighbourhoods regarding the heat transition. An interviewee acknowledged that as an initiative you cannot make decisions for all the residents in the neighbourhood. Besides, interviewees notice that the distinction between decisions regarding heat projects and collective solar projects is very important. In collective solar energy projects, the municipality and province have to perform a more facilitative and stimulative role. However, an interviewee argues that the municipality should persuade schools to install collective solar panels with regulations.

4.4.4 Clear ambition and vision

According to interviewees in The Hague, the ideal government has a well-developed vision of the energy transition. Respondents demand from the municipality to have consistency in policies, clear objectives, and transparency about decisions. An interviewee states that *“what we need from the municipality is policy, clear timelines, and legal frameworks. And especially to be able to communicate the message to the residents. What will happen in the neighbourhood and when?”* (respondent H6). Moreover, an interviewee expressed that the municipality should acknowledge in their vision that initiatives have the capacity and knowledge to play an important role in the energy transition.

4.4.5 Flexible/responsive government

According to some respondents, the ideal role of the local government in supporting initiatives is responsive. An interviewee expressed that the local and regional governments are ultimately responsible for the energy transition. However, if initiatives want to play a stronger role in their neighbourhood, the municipality has to provide initiatives the opportunity to do so. According to an interviewee, in this more flexible and responsive role, the municipality must accept that some plans of initiatives may not correspond to the municipality's vision or to that of the councillor.

4.4.6 Not frustrating initiatives

Two interviewees expressed that the ideal role of the government is not frustrating initiatives. The municipality should give space to initiatives to develop themselves and not frustrate the initiatives in obtaining building permits at the start of a project.

4.4.8 Coordination

According to an interviewee, the local and regional government should function as a system integrator. *“If you let all the initiatives go their way, then you get all these little islands with no interaction and*

cohesion” (respondent H8). The role of the system integrator is to merge all those separate subsystems into a working system.

To conclude, Table 9 shows an overview of the ideal roles of the local and regional government in supporting CRE initiatives according to the CRE initiative and intermediary organisation representatives. Most respondents agree that the cooperation of the municipality and province with the initiatives should be on a level of co-creation. According to interviewees, the initiatives have the knowledge and capacity to play an important role in the energy transition. However, due to the complexity of heat transition, the local and regional governments should take a more leading role. This only applies to heat projects, because a more facilitating and stimulating role is expected in the implementation of collective solar projects.

Table 9. Overview of ideal roles in de words of the CRE initiatives and the intermediary organisation

Ideal roles	Relevance ¹
Equal partners (co-creation)	6 / 10
Stimulation and facilitation	5 / 10
Take the lead (heat transition)	4 / 10
Clear ambition and vision	3 / 10
Flexible government	3 / 10
Not frustrating initiatives	2 / 10
Coordination	1 / 10

¹ Relevance expressed as the frequency of barriers mentioned by different interviewees.

4.6 Ideal roles of the local government: perspective municipal officials

This section presents the ideal roles of the local government in supporting CRE initiatives according to officials of the Municipality of The Hague. During the interviews with the municipal officials, the analytical framework of this research was presented as input for the respondents to describe the ideal role of the government in supporting CRE initiatives.

4.6.1 Customisation per initiative

All the interviewed officials of the Municipality of The Hague mentioned that the ideal role of the government depends on the characteristics of the initiative. Hence, all five roles in the framework are useful in supporting the initiatives. According to a municipal official, the frontrunner initiatives should be facilitated and new initiatives in neighbourhoods with less active residents more stimulated. Another official expressed that *“In my opinion, the support should always be customised per initiative, what is the initiative and what do they need?”* (respondent HM3). Moreover, an official expressed that it is important to make clear what you can and cannot expect from the municipality.

4.6.2 facilitation, stimulation, and network steering

An official expressed that the role of the municipality has to go beyond facilitation because the municipality is politically responsible for the energy transition. The municipality should take the lead in the energy transition to get all the neighbourhoods on board. The first step is the facilitation of the small initiatives, but for the larger projects, the municipality should take a more stimulating and network steering role. According to an official, the municipality should achieve results to phase out natural gas in 2040. However, the challenge is to do this together with the residents.

To conclude, when comparing the ideal roles from the perspective of the government with the perspective of the initiatives and the intermediary organisation, a couple of things stand out. First, the

municipality feels politically responsible for the energy transition as they set the goal to phase out natural gas in 2040. For this reason, they want to stay in control and support initiatives in the facilitating and stimulating role. The initiatives also perceive facilitation and stimulation as the ideal role of the government. However, the initiatives would like to be acknowledged as a professional party that can contribute to the energy transition. The initiative representatives indicate that they want to cooperate with the municipality on a level of co-creation as equal partners. To achieve this, the government must start by listening to the plans of the initiatives.

4.7 Conclusion: Municipality of The Hague

To conclude, different types of CRE initiatives are active in the Municipality of The Hague. Most initiatives are in the mature or upscaling phase and execute both collective solar and heat projects. The intermediary organisation 'Duurzaam Den Haag' main focus is on facilitating new initiatives with knowledge and advice. Six of the initiatives in this study are a member of the working group heat, where initiatives exchange knowledge. The Municipality of The Hague is supporting initiatives mainly in the facilitating and stimulating role with a variety of practices. The diversity of practices indicate that the municipality values the support of CRE initiatives. Moreover, the analysis of the government support per different phases and types of initiatives does not reveal any substantial differences. This is in line with the lack of policies of the municipality in supporting citizen initiatives. Furthermore, the barriers of the initiatives and the intermediary organisation have similarities with the barriers that the officials face in supporting the initiatives. The main challenges of the municipality are to improve the internal alignment between the different departments, reduce the mistrust between the residents and the municipality, develop policies on how to support citizen initiatives, and develop policy on how to deal with an initiative that becomes a professional party. Regarding the ideal role, initiative representatives would like to work with the municipality on a level of co-creation. However, the municipality rather keeps control over the energy transition by facilitating and stimulating the initiatives.

5. Case Study: The Municipality of Rotterdam

This chapter presents an overview of the results from the case study of the Municipality of Rotterdam. The structure of this chapter is in line with the previous chapter. First, the intermediary organisation and the CRE initiatives are introduced in section 5.1. Second, the roles and practices of the municipality are presented in section 5.2. Third, the barriers the CRE initiatives and intermediary organisation face in the interaction with the local and regional government are discussed in section 5.3. The barriers municipal officials face when performing their role in supporting CRE initiatives are discussed in section 5.4. Subsequently, the ideal roles of the local and regional government in supporting CRE initiatives are discussed in sections 5.5 and 5.6. Finally, the conclusion of this chapter is presented in section 5.7.

5.1 CRE initiatives in the Municipality of Rotterdam

In the Municipality of Rotterdam, one intermediary organisation representative and five CRE initiatives representatives were interviewed. The geographical location of the initiatives within the Municipality of Rotterdam is presented in Figure 4. Most initiatives are still in the initial or growing phase, mobilising members and preparing collective solar projects. The energy cooperative Blijstroom is, with four collective solar roofs, the only initiative in the mature phase in Rotterdam. The main focus of all the initiatives is on carrying out collective solar projects. However, most of the initiatives are also planning to start activities related to the heat transition. Table 10 provides an overview of the characteristics of the intermediary organisation and the CRE initiatives.

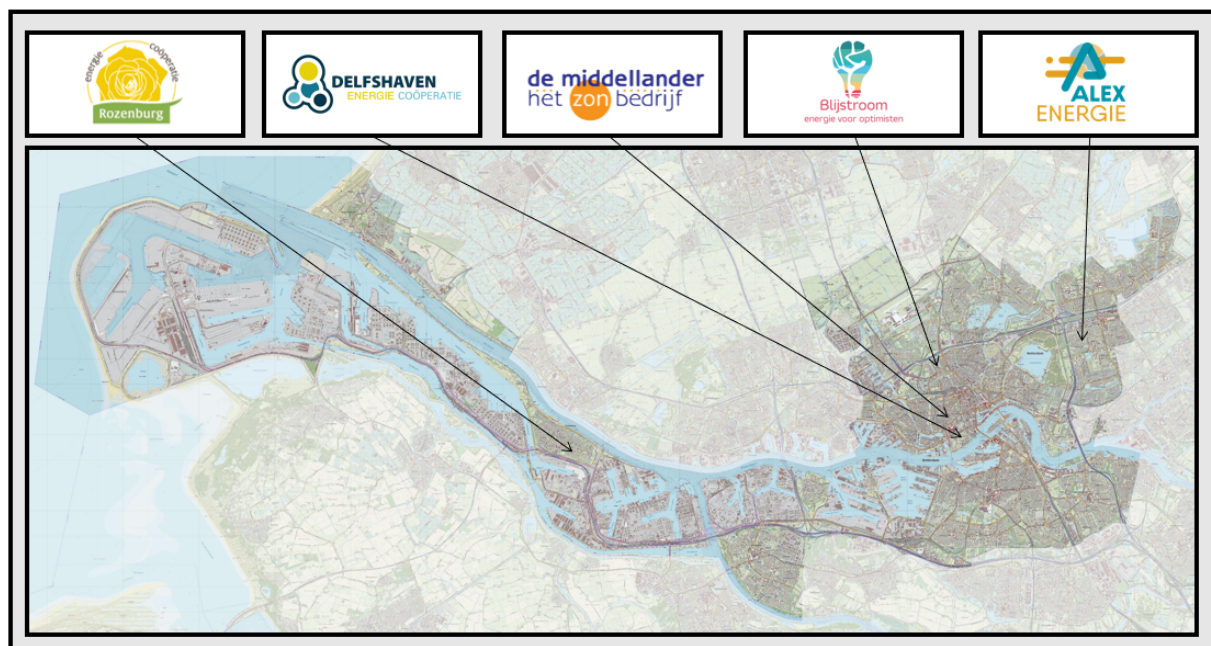


Figure 4. Map of CRE initiatives in the Municipality of Rotterdam (modified from Gemeentenatlas, 2021)

Table 10. Overview of CRE initiatives and the intermediary organisation in the Municipality of Rotterdam

Name	Neighbourhood	Founding year	Phase	Type	Activities
Energie van Rotterdam	Intermediary organisation	2020	Growing	Collective solar projects	Established to shape the collaboration between the municipality and energy cooperatives in Rotterdam.
Coöperatie Blijdstroom	Blijdorp	2014	Mature	Collective solar projects	<ul style="list-style-type: none"> • Four collective solar roofs • Explore role in heat transition
Delfshaven Energie Coöperatie	Delfshaven	2019	Initial	Collective solar projects	<ul style="list-style-type: none"> • Planning to install two collective solar roofs on schools • Energy coaches • Explore energy storage in for example a neighbourhood battery.
Energiecoöperatie Rozenburg	Rozenburg	2019	Initial	Collective solar projects	<ul style="list-style-type: none"> • Planning to install collective solar roofs • Explore wind energy
Wijkbedrijf de Middellander	Middelland	2015 (2019 start sustainability agenda)	Initial	Collective solar projects	<ul style="list-style-type: none"> • Planning to establish a local cooperative for collective solar roofs • Work on the theme's climate adaptation, energy transition, and clean air.
Alex Energie	Rotterdam Prins Alexander	2019	Growing	Collective solar projects	<ul style="list-style-type: none"> • Planning to install two collective solar roofs • Energy saving • Planning to conduct research on phasing out gas

5.1.1 Intermediary organisation: Energie van Rotterdam

The interviewed CRE initiatives in Rotterdam are all affiliated with the intermediary organisation 'Energie van Rotterdam'. Energie van Rotterdam is founded in 2020 to improve collaboration, create a network, and share knowledge between the energy cooperatives in Rotterdam. Moreover, Energie van Rotterdam shapes the collaboration between the municipality and energy cooperatives and functions as a contact point to the municipality and province. According to the founder of Energie van Rotterdam, the focus for the next five years is to realise collective solar roofs and to enhance the professionalism of the energy cooperatives. In addition, most of the energy cooperatives are also planning to carry out activities in the heat transition on topics such as phasing out gas, energy-saving, and energy storage. Energie van Rotterdam receives support from the municipality in three ways: **subsidies**, **roofs** for collective solar panels, and support in **finding project funding**.

In 2021, the Municipality of Rotterdam signed in collaboration with Energie van Rotterdam, a Climate Deal to realise 90 cooperative solar roofs in Rotterdam by 2025. The Climate Deal entails that in 2025, a strong cooperative movement in Rotterdam should be in place to release the national ambition of

50 percent renewable energy production on land owned by the local environment (Energieswitch010, 2021). According to a municipal official, the advent of Energie van Rotterdam will enhance the development and professionalism of the cooperatives in Rotterdam. Furthermore, an intermediary organisation founded by residents is a good contact point for new initiatives. An official argues that *“The municipality is, of course, a completely different experience for residents than a citizens organisation”* (Respondent RM1). Therefore, Energie van Rotterdam will increase the participation of residents in the energy transition.

Practices of Energie van Rotterdam

Although Energie van Rotterdam was recently established, interviewees of the initiatives in Rotterdam indicated that the intermediary organisation performs (or is planning to perform) the following practices. Energie van Rotterdam will function as a **point of contact** to the municipality and province to acquire **subsidies** and **roofs to install collective solar panels**. Moreover, Energie van Rotterdam will facilitate **knowledge exchange** to increase the professionalism of the initiatives. An interviewee argues that *“the added value of Energie van Rotterdam is that not every neighbourhood has to reinvent the wheel”* (respondent R4).

To conclude, the main focus of Energie van Rotterdam is **stimulating** (rung 3) the affiliated initiatives with acquiring roofs and subsidies from the municipality. Energie van Rotterdam can be considered as a project office to enhance the professionalism of the CRE initiatives in Rotterdam. The signing of the Climate Deal with the municipality indicates that Energie van Rotterdam has the ambition to achieve results.

5.2 Roles and practices: Municipality of Rotterdam

This section presents the roles and practices the Municipality of Rotterdam fulfils in supporting CRE initiatives. The primary data of the interviews were complemented with secondary data (i.e. policy documents and government websites). The different practices of the municipality have been classified according to the roles of the analytical framework presented in section 2.3.

Rung 1: Letting go

The Municipality of Rotterdam states that change in the energy system only takes place when the municipality and residents work together. To achieve the goals of the energy transition the municipality aims to support local initiatives (Gemeente Rotterdam, 2020a). All the initiatives received support or are in contact with the municipality to receive support. Hence, the role of letting go is not applicable in the Municipality of Rotterdam.

Rung 2: Facilitating/enabling

The shift to new energy sources also requires changes to the current energy system. Besides the focus on solar and wind energy projects, the Municipality of Rotterdam also facilitates energy cooperatives (Gemeente Rotterdam, 2020a). The municipality facilitates the initiatives with the following practices:

Provide advice and expertise

The Municipality of Rotterdam launched an **online information portal** (see <https://www.rotterdam.nl/meedenken-doen/initiatievenloket/>) to answer questions about the energy transition and provide advice (Gemeente Rotterdam, 2020b). Moreover, the Department of Sustainability provides **personal advice and expertise** to local sustainability initiatives if they have

questions. If the Department of Sustainability cannot provide the answer, they link the initiatives to experts within the municipality or to other organisations.

Legal and regulatory support

The Department of Sustainability provides legal and regulatory support to initiatives. Moreover, an initiative received legal advice from CityLab010 to install collective solar roofs. CityLab010 is a programme of the Municipality of Rotterdam to support initiatives, entrepreneurs, and organisations with social innovation in Rotterdam (CityLab010, 2021).

Rung 3: Stimulating

The Municipality of Rotterdam stimulating energy cooperatives to raise more awareness for a decentralised energy system. Moreover, the energy cooperatives contribute to CO2 reduction by carrying out collective solar projects (Gemeente Rotterdam, 2020b). The municipality stimulates the initiatives with the following practices:

Financial support

In Rotterdam, there is no standard subsidy scheme for CRE initiatives. For each initiative, possible **financial support** is considered. The most common financial support is a start-up subsidy to establish a CRE initiative, subsidy to install a collective solar roof, technical feasibility studies, or financial support for events. In addition to small subsidies, the Municipality provides financing through **affordable loans**. As well, the Municipality of Rotterdam runs the subsidy scheme of Citylab010. The subsidy is intended for investments in innovation in the field of sustainability, circularity, and digitalisation and is up to €100.000 per project (CityLab010, 2021). Only one CRE initiative in Rotterdam has received this subsidy. Finally, the Municipality of Rotterdam supports the intermediary organisation 'Energie van Rotterdam' with **finding project funding**.

Provide roofs for collective solar projects

In Rotterdam, all the interviewed CRE initiatives representatives are in contact with the municipality to acquire a roof to install solar panels. To date, only one initiative received a roof of the municipality. As discussed in section 5.1.1, the municipality signed in collaboration with 'Energie van Rotterdam' a climate deal to realise 90 cooperative solar roofs in Rotterdam by 2025 (Energieswitch010, 2021).

Rung 4: Network steering

The interviews and policy documents indicate that the Municipality of Rotterdam does not perform practices in the network steering role. The support is mainly focused on facilitating and stimulating the initiatives.

Rung 5: Regulating

The Municipality of Rotterdam regulates the energy transition and CRE initiatives with **policies** and **regulations**. A government official expressed that to support initiatives it is important to have a vision and a policy framework. *"We want to support initiatives, but within certain frameworks, in that way, the activities of initiatives do not conflict with other parts of municipal policy"* (respondent RM2). In the 'Energy Transition plan 2020 – 2022' and 'Rotterdam Sustainability Compass 2020' the different supportive practices of the municipality are clarified (Gemeente Rotterdam, 2020a; Gemeente

Rotterdam, 2020b). However, the role of CRE initiatives in the energy transition is only discussed in a generic way. This research will not address the specific policies and regulations in detail.

To conclude, the Municipality of Rotterdam supports initiatives in the facilitating and stimulating role. In the facilitating role, the municipality provides advice and legal support. In the stimulating role, the municipality provides start-up subsidies and is in contact with initiatives on the provision of roofs to install solar panels. The municipality of Rotterdam is still at the beginning of supporting CRE initiatives and this is also reflected in the variety of practices. The initiatives representatives indicate that they need roofs and subsidies to be able to start the first project. Table 11, presents an overview of the roles and practices of the Municipality of Rotterdam in supporting CRE initiatives

Table 11. Overview roles and practices Municipality of Rotterdam

Rung	Roles for local governments	Practices Municipality of Rotterdam
5	Regulating	<ul style="list-style-type: none"> - Policies - Regulations
4	Network steering	<ul style="list-style-type: none"> - Absent
3	Stimulating	<ul style="list-style-type: none"> - Subsidy - Technical feasibility studies - Affordable loans - Support in finding project funding - Provide roofs for collective solar projects
2	Facilitating/ enabling	<ul style="list-style-type: none"> - Provide advice and expertise - Online information portal - Legal and regulatory support
1	Letting go	<ul style="list-style-type: none"> - Absent

5.2.1 Type and phase

In section 5.2 the type of roles and the practices the municipality fulfils in supporting CRE initiatives were assessed. This section discusses to what extent these roles and practices change for different types and phases of the initiatives In Rotterdam.

As described in section 2.2 the initiatives can be classified on their main activity of heat projects and/or collective solar projects. In Rotterdam, the main activities of the initiatives are focused on collective solar projects as shown in Table 10. All the initiatives are in the initial or growing phase except for the energy cooperative Blijstroom. Blijstroom is in the mature phase and installed four collective solar roofs in Rotterdam. The other CRE initiatives are still in the process of acquiring roofs to start collective solar projects. The difference between the phases of the initiatives is reflected in the practices offered by the municipality. Blijstroom received a subsidy to install a collective solar roof and a subsidy from CityLab010. Moreover, Blijstroom received legal and regulatory support from the municipality in realising the collective solar roofs. As opposed to Blijstroom the other initiatives only received small start-up subsidies, financial support to organise an event, or a subsidy to conduct a technical feasibility study. The difference in the type of support of the municipality to the initiatives can accordingly be attributed to the phase of the initiatives. For example, to receive a subsidy of CityLab010 the project plan must meet certain strict requirements (CityLab010, 2021).

To conclude, the analysis indicates no difference between the types because all initiatives focus on collective solar projects. Regarding the phase, differences can be observed as Blijstroom is the only initiative that is operational with four collective solar roofs and therefore received more support. The Municipality of Rotterdam is still exploring and pioneering how to offer support in a more structured way. A government official expressed that they are in the process of developing policy to support initiatives based on the phase of the initiatives.

5.3 Barriers: perspective CRE initiatives and intermediary organisation

This section presents the barriers CRE initiatives and the intermediary organisation face in the interaction with the local government. In addition, the responses of the municipal officials to the five most frequently mentioned barriers are discussed to identify the challenges of the municipality.

5.3.1 Internal alignment

In Rotterdam, almost all interviewees expressed that there is a lack of internal coordination between the different departments of the municipality. An interviewee expressed that *“The Municipality of Rotterdam is a huge organisation, you can deal with one department of the organisation without other departments knowing about it”* (respondent R2). According to interviewees, the municipality should improve cooperation and knowledge exchange between the different departments to avoid frustrating CRE initiatives. *“The department of real estate does not know what an energy initiative is”* (respondent R5).

Responses officials to the barriers that explain the challenges of the municipality

Officials of the Department of Sustainability recognise the lack of internal alignment and indicate that they are also affected by this problem. An official argues that it is partly unavoidable because the Municipality of Rotterdam is a very large organisation. However, the municipality wants to improve the internal alignment with new programmes such as the ‘Compass Consultation’ (in Dutch: Kompas Overleg), to enhance the cooperation between the departments. An official expressed that changing the way the municipality work is difficult. *“It takes time and is difficult to change the internal culture of the municipality”* (respondent RM1). The challenge of the municipality is to improve the internal alignment of the different departments.

5.3.2 Keep money within the local economy

In Rotterdam, some respondents argue that cooperation with local initiatives should be more important for the municipality than cooperation with large companies. An interviewee expressed that most of the time, the business case is decisive at the municipality, but money must stay within the municipality. *“That’s way more important than Eneco, a Japanese company realising the project for one euro cheaper”* (respondent R5). Moreover, interviewees expressed that a CRE initiative is not able to compete with the energy suppliers in the open market. The large companies are only focused on making a profit, the municipality should put their society in the first place. Another interviewee in Rotterdam refers to this barrier as the locked-in syndrome of the municipality with large companies. The neutral position of the municipality is at stake because the municipality has made itself through all sorts of decisions depended on companies. *“For example, the waste incineration company AVR, is some years ago sold to a Chinese company. They agreed to the compulsory supply of heat at a certain rate, so they are bound by that agreement”* (respondent R3). The representative of Energie van Rotterdam expressed that by investing in local energy cooperatives the energy transition will be also

more inclusive because the aim is to make the collective solar roofs available and affordable for all the residents in Rotterdam.

Responses officials to the barriers that explain the challenges of the municipality

Governmental officials of the Municipality of Rotterdam are disappointed that this feeling prevails. However, as a municipality, you need large companies for the execution of larger projects in the energy transition. An official expressed that it is not always possible to treat initiatives equally as large companies because a certain degree of technical and expert knowledge is required. Although initiatives have a lot of expertise and knowledge, they are still volunteers. However, an official expressed that the challenge of the municipality is to look at what role CRE initiatives can play in larger projects.

5.3.3 Bureaucracy (lack of flexibility)

Interviewees expressed that the residents want more and faster developments in the energy transition. The world of residents runs into the system world of the municipality. According to an interviewee, the system world is part of the culture within the municipalities and leads to a lack of flexibility. *“Everything has not to be double-checked but checked twenty times and everything must be tendered. There is no flexibility at all and as the municipality, you have to deal with a dynamic society, that is why conflicts arise”* (respondent R6). As well, an interviewee is frustrated that it takes a long time to acquire roofs from the municipality to install solar panels.

Responses officials to the barriers that explain the challenges of the municipality

According to an official of the Municipality of Rotterdam, an administrative process has to be taken into account when dealing with the municipality. Initiatives sometimes have the feeling that a governmental official can make a lot of decisions by itself. Nevertheless, in the municipality, officials at the top of the organisation decide on budgets and projects. The challenge of the municipality is to create more understanding of the members of initiatives for the world of the municipality.

5.3.4 Lack of participation

In Rotterdam, some initiative representatives are dissatisfied with the level of participation. An interviewee expressed that the Municipality of Rotterdam is still too much focused on its own strength, performance, and abilities and less focused on citizen participation. An interviewee argues that the question the municipality should ask is *“how can we organise change in society and how can we include everyone?”* (respondent R2). Another interviewee argues that the municipality should make use of the capacity and knowledge in the neighbourhoods. According to an interviewee, the feedback of all the initiatives in Rotterdam on the Transition Vision Heat (in Dutch: Transitievisie Warmte) is an example of the lack of participation. *“In the course of the past 4 years, the municipality has organised almost no participation. Only in the final phase they ask for our feedback, and that is not how participation works”* (respondent R5). According to respondents, the energy transition requires citizen participation in the policy process.

Responses officials to the barriers that explain the challenges of the municipality

In Rotterdam, the government officials recognise the lack of participation in the plans of the municipality. The municipality often realises too late that residents have to be involved. An official expressed that citizen participation is still a new movement at it takes time. *“What I can do is just emphasise the value of the initiatives within the municipality”* (respondent RM1). On the other hand,

an official expressed that more participation also means more opinions. *“If you have to take all those opinions into account, the projects will become unworkable”* (respondent RM2). The challenge of the municipality is to involve initiatives at an earlier stage in the drafting of neighbourhoods plans.

5.3.5 Underestimating the expertise and professionalism of the initiatives

In Rotterdam, the representatives of the initiatives want to be taken more seriously by the municipality. An interviewee argues that the role of volunteers in the energy transition is underestimated. Volunteers are willing to invest money in the city, possess knowledge, and are prepared to take the next step in sustainability. *“What else do we have to do to be taken more seriously by the government?”* (respondent R5). Another respondent expressed that, as a municipality it is easy to provide subsidies for a project but the next step is working together with initiatives as equal partners.

Responses officials to the barriers that explain the challenges of the municipality

In Rotterdam, a government official believes that the municipality underestimates the expertise and professionalism of CRE initiatives because the municipality is still too focused on the top-down policy. However, a change from a top-down to a more bottom-up mentality takes time. *“I have the feeling that a younger generation of civil servants has a more innovative vision and is less rigid, so to speak”* (respondent RM1). Another official of Rotterdam does not understand why this barrier is mentioned by the initiative representatives. *“The municipality is trying to help the volunteers with knowledge, and resources because the volunteers often have a job and are not full-time available”* (respondent RM2). The challenge of the municipality is to better utilise the knowledge and capacity of initiatives.

5.3.6 Lack of vision and control

According to interviewees, the municipality should develop a long-term and comprehensive vision of the energy transition. An interviewee argues that *“the Councillor is too much focussed on short-term wins for own success”* (respondent R2). The lack of a vision results in a lack of coordination between policies in the heat transition, the energy transition, and the built environment. Moreover, an interviewee expressed that the municipality should take more control of the energy transition.

5.3.7 Lack of resources and capacity

In Rotterdam, one respondent noticed that the municipality has a lack of capacity.

5.3.8 Lack of knowledge

In Rotterdam, one interviewee expressed that as a result of the complexity of the energy transition the municipality has a lack of experience and expertise.

5.3.9 Lack of supportive policies

In Rotterdam, one respondent has the feeling that they have to develop their own policies on CRE initiatives as there are no policies of the municipality.

Table 12 presents a summary of the barriers CRE initiatives and the intermediary organisation face in the interaction with the local government and the responses of municipal officials to the five most frequently mentioned barriers that explain the challenges of the municipality.

Table 12. Overview barriers perspective CRE initiatives and intermediary organisation in Rotterdam

Barriers	Relevance ¹	Challenges municipality
Internal alignment	5 / 6	<ul style="list-style-type: none"> Improve the internal alignment of the different departments
Keep money within the local economy	4 / 6	<ul style="list-style-type: none"> Explore the role that CRE initiatives can play in the execution of larger projects
Bureaucracy (lack of flexibility)	4 / 6	<ul style="list-style-type: none"> Create more understanding of the members of initiatives for the world of the municipality
Lack of participation	3 / 6	<ul style="list-style-type: none"> Involve initiatives at an earlier stage in the plans of the municipality.
Underestimating the expertise and professionalism of the initiatives	3 / 6	<ul style="list-style-type: none"> Better utilise the knowledge and capacity of initiatives.
Lack of vision	3 / 6	
Lack of resources and capacity	1 / 6	
Lack of knowledge	1 / 6	
Lack of supportive policies	1 / 6	

¹Relevance expressed as the frequency of barriers mentioned by different interviewees

5.4 Barriers: perspective municipal officials

This section presents the barriers the municipal officials in Rotterdam face in supporting CRE initiatives.

5.4.1 Internal alignment municipality

The lack of internal alignment of the municipality also is perceived as a barrier by a municipal official. According to a municipal official, in the municipality, each department works on its own theme, while CRE initiatives are active in multiple themes. This results in frustration at the initiatives and the Department of Sustainability. Moreover, an official expressed that the municipality has to serve different interests. As a result, there are often different opinions within the municipality. An official expressed that *“the department of sustainability is still new within the municipality. We are pioneering and therefore it is difficult to get other departments on board”* (respondent RM1).

5.4.2 Mistrust between residents and the municipality

According to an official, the municipality is still too much working from a top-down approach. Municipal officials often do not realise how the average resident of Rotterdam perceives the municipality. In some projects, it is necessary to take a top-down approach. However, the municipality should involve citizens in the policy process to counter the mistrust between residents and the municipality.

5.4.3 Lack of financial resources

A lack of financial resources to realise collective solar roofs is perceived as a barrier in supporting CRE initiatives. According to an official, in collective solar projects, a payback period of 7 to 10 years is feasible. However, the payback period is uncertain, and starting a project loan is necessary. *“To receive a loan from the municipality or another party there are strict conditions which make it difficult to start a project”* (respondent RM2).

5.4.4 Lack of knowledge

A government official of the Municipality of Rotterdam expressed that the officials within the municipality do not always have the right knowledge and best solutions to support CRE initiatives. For this reason, the Department of Sustainability links initiatives also the experts and organisations outside the municipality.

Table 13 summarises and matches the barriers of the perspective of the CRE initiatives and the intermediary organisation with the responses of the municipal officials and the barriers from the perspective of the municipal officials. First, the internal alignment of the municipality was mentioned as a barrier by both the initiatives and the officials. Although internal coordination is difficult in a large organisation such as the municipality, it is clear that the challenge is to improve the alignment between the different departments. Second, the lack of flexibility is partly due caused by political responsibility of the municipality. The municipality should create more understanding among members of initiatives for the world of the municipality to reduce the mistrust in the government. Third, initiative representatives criticised the municipality for underinvesting in their community. This barrier may be related to the lack of financial resources of the municipality to invest in CRE initiatives. The municipality often finds it risky to invest in local initiatives because the payback time of solar panels is long and there are doubts about the continuity and professionalism of the initiatives. Fourth, the lack of participation is a familiar problem in the municipality. The municipality lacks the money and knowledge to set up good participation processes. Finally, the mistrust between the municipality and initiatives can be a reason for the government to underestimate the expertise and professionalism of the initiatives.

Table 13. Matching the barriers of CRE initiatives with the barriers of the municipal officials

Barriers CRE initiatives	Challenges	Barriers municipal officials
Internal alignment	Improve the internal alignment of the different departments	Internal alignment municipality
Bureaucracy (lack of flexibility)	Create more understanding of the members of initiatives for the world of the municipality	Mistrust between residents and the municipality
Keep money within the local economy	Explore the role that CRE initiatives can play in the execution of larger projects	Lack of financial resources
Lack of participation	Involve initiatives at an earlier stage in the plans of the municipality.	Lack of knowledge and financial resources
Underestimating the expertise and professionalism of the initiatives	Better utilise the knowledge and capacity of initiatives.	Mistrust between residents and the municipality

5.5 Ideal roles local and regional government: perspective CRE initiatives

This section presents the ideal roles of the local and regional government in supporting CRE initiatives as described in the words of the CRE initiative and the intermediary organisation representatives in Rotterdam.

5.5.1 Facilitation and stimulation

According to interviewees, the ideal government facilitates and stimulates initiatives with funding and supportive policies. An interviewee expressed that currently there is a lack of policies to support the development of energy corporations. However, the amount of subsidy increased due to the advent of Energie van Rotterdam and the signed Climate Deal to install 90 collective solar roofs. An interviewee argues that it is important that the local and regional government stimulate self-organisation in society, especially as the CRE initiatives becoming more inclusive.

5.5.2 Equal partners (co-creation)

The representative of the intermediary organisation in Rotterdam prefers to work together with the municipality in a process of co-creation. According to an interviewee, the next years will be the test of whether the municipality really wants to work together with the initiatives. Especially, in the heat transition, it will be challenging for the municipality to organise cooperation. Moreover, interviewees in Rotterdam mention that the residents should have more ownership and control over the changes in their neighbourhood. The municipality has to start and open constructive and continuous dialogue with the initiatives. *“The municipality and the initiatives have to come up with a joint strategy and not one that is defined by one of the parties”* (respondent R6).

5.5.3 Flexible/responsive government

According to interviewees, the ideal government is responsive to different situations. In some areas, the municipality has to take the lead, but in other areas, the municipality should give space to other parties. *“This requires a flexible attitude of the municipality and not a one-size-fits-all approach”* (respondent R3). Another interviewee expressed that the municipality has to be flexible because society is constantly developing and changing. Therefore, the municipality should build more flexibility into their projects.

5.5.4 Legitimise initiatives

Interviewees expressed that the Municipality of Rotterdam should legitimise the bottom-up citizen movement through publicly communicating the value of local initiatives to the residents and other organisations. According to an interviewee, the climate deal to realise 90 cooperative solar roofs is a step in the right direction. If the municipality legitimise CRE initiatives it will convince other parties to collaborate with initiatives. For example, the umbrella organisation of schools in Rotterdam is still hesitant to collaborate with energy cooperatives. *“It is the role of the municipality is to remove this reluctance from parties like that”* (respondent R4).

5.5.5 Clear ambition and vision

In Rotterdam, interviewees expressed that they want the municipality to establish a better vision of the energy transition. A clear vision and ambitions will increase the support for the energy transition. As well, an interviewee would like that the municipality provides a clear overview for residents and initiatives on how to reduce CO2 emissions and save money at the same time.

5.5.6 Coordination

According to one interviewee, the local and regional government should perform a coordinating role to connect the interests of the different initiatives.

Table 14 shows an overview of the ideal roles of the local and regional government in supporting CRE initiatives according to the CRE initiative and intermediary organisation representatives. Most initiatives perceive facilitation and stimulation as the ideal role of the local and regional government. This can be explained by the fact that most initiatives are still in the initial and growing phase and still need support in the form of roofs and subsidies. However, the representatives would also like to cooperate with the municipality in a process of co-creation. The initiatives want a greater voice in the plans made by the municipality for their neighbourhoods. To involve the initiatives in drafting neighbourhood plans, the municipality must adopt a more flexible attitude.

Table 14. Overview of ideal roles in de words of the CRE initiatives and the intermediary

Ideal role	Relevance¹
Stimulation and facilitation	5 / 6
Equal partners (co-creation)	4 / 6
Flexible government	3 / 6
Legitimise initiatives	2 / 6
Clear ambition and vision	2 / 6
Coordination	1 / 6

¹ Relevance expressed as the frequency of ideal roles mentioned by different interviewees

5.6 Ideal roles of the local government: perspective municipal officials

This section presents the ideal roles of the local government in supporting CRE initiatives according to officials of the Municipality of Rotterdam. During the interviews with the municipal officials, the analytical framework of this research was presented as input for the respondents to describe the ideal roles of the government in supporting CRE initiatives.

5.6.1 Facilitation, stimulation, and network steering

A municipal official expressed that facilitation and stimulation is the most ideal role of the government in supporting CRE initiatives. The municipality should not take over the plans of the initiative but give the initiative space to develop the organisation. *“As a municipality, you should not want to take over the plans, but you should ensure that they have the freedom and space to develop themselves”* (respondent RM1). Moreover, the municipality should keep an overview of all the initiatives and connect the initiatives in a network.

5.6.2 Regulation: policy framework and vision

According to an official, the municipality must have a clear vision and policy frameworks in supporting CRE initiatives. The support of initiatives must be in line with other municipal policies to prevent initiatives from failing.

To conclude, when comparing the ideal roles from the perspective of the government to the perspective of the initiatives, a few points stand out. The representatives and officials agree that facilitating and stimulating initiatives is the most ideal role of the local government. Also, both parties indicate that the municipality must have a clear vision in supporting initiatives. The difference is that

the initiatives' desire to take cooperation a step further on a level of co-creation. However, the government wants to keep control of the plans for the neighbourhoods in the energy transition.

5.7 Conclusion: Municipality of Rotterdam

To conclude, the main focus of the activities of the initiatives in Rotterdam is on the execution of collective solar projects. The intermediary organisation 'Energie van Rotterdam' was founded to increase the number of collective solar projects and to further professionalise the initiatives. To date, four (out of five) initiatives in Rotterdam are in the initial or growing phase and are still planning to install the first collective solar roof. Only one initiative is in the mature phase and installed four collective solar roofs in Rotterdam. Currently, the municipality is supporting the initiatives in the initial phase with facilitative practices such as providing advice and the initiative in the mature phase with subsidies and roofs in the stimulating role. The barriers the initiatives and the intermediary organisation face have similarities with the barriers that the officials face in supporting the initiatives. The barriers internal alignment, bureaucracy and, lack of participation are well-known problems in the municipality and can also be partly explained by the size of the municipal organisation. To overcome these barriers the officials expressed the municipality needs more resources and capacity. Moreover, the municipality tends to seek cooperation with large companies, rather than with local initiatives. The officials argue that for larger projects the initiatives do not have the technical and expert knowledge that is required. Therefore, this barrier is related to the municipality underestimating the knowledge and professionalism of initiatives. Furthermore, facilitation and stimulation of the initiatives are perceived as ideal roles by both the officials and the representatives. The initiative and the intermediary organisation representatives indicate that in the future they would like to take the cooperation to a level of co-creation, by developing plans together as equal partners. In an open and ongoing dialogue, the initiatives want to develop a joint strategy with the municipality for the plans in their neighbourhood.

6. Province of South Holland

This chapter presents an overview of the results from the Province of South Holland. As the initiative representatives expressed that they are mainly affected by the role of the municipality, the barriers to the role of the province were not examined in this research. First, the roles and practices of the regional government in supporting CRE initiatives are presented in section 6.1. Second, the barriers the provincial officials face when performing their role in supporting CRE initiatives are presented in section 6.2. Third, the ideal roles of the regional government in supporting CRE initiatives according to provincial officials are discussed in section 6.3. Finally, the conclusion of this chapter is presented in section 6.4.

6.1 Roles and practices regional government

This section presents the roles and practices of the Province of South Holland in supporting CRE initiatives. The primary data of the interviews were complemented with secondary data (i.e. policy documents and government websites). The different practices of the province have been classified according to the roles of the analytical framework presented in section 2.3.

Rung 1: Letting go

According to provincial officials, in the next years, the role of letting go will not be applicable in the Province of South Holland. Letting initiatives go is only possible when the CRE initiatives are professional organisations. According to an official *“perhaps in 15 years' time”* (respondent P4).

Rung 2: Facilitating/enabling

The province facilitates CRE initiatives with the following practices:

Provide advice and expertise

Several initiatives in The Hague and Rotterdam received advice from the province on project plans, collective solar roofs, and technical questions on the heat transition. Moreover, the provincial officials linked initiatives to other organisations and experts. According to an interviewee, *“the province ensured that we were able to build up a good relationship with Stedin. They gave us a special phone number and email address so we could get in contact with someone”* (respondent H5). Furthermore, the website of the province functions as an **online information portal** with information for CRE initiatives.

Legal and regulatory support

The initiatives in the process of application for Local Initiatives Energy Transition Subsidy (In Dutch: Lokale Initiatieven Energietransitie Subsidie) also receive legal and regulatory support from provincial officials.

Organising online webinars

The province organises online webinars to inform CRE initiatives in South-holland and other stakeholders. In the past year, the focus has been on local ownership in sustainable energy projects.

Rung 3: Stimulating

The province stimulates CRE initiatives with the following practice:

Financial support

The Province of South Holland stimulates CRE initiatives with the Local Initiatives Energy Transition Subsidy (In Dutch: Lokale Initiatieven Energietransitie Subsidie). The subsidy is available for the plan development and project preparation of local energy initiatives. The goal of the initiative has to focus on energy saving, the generation of sustainable heat or energy, or reducing CO2 emissions. The maximum subsidy per project is €75.000 and covers a maximum of 50% of the project preparation costs (Provincie Zuid-Holland, 2021). In both Rotterdam and The Hague, initiatives received this subsidy to install collective solar roofs, hire an advisor, organise events and conduct **technical feasibility studies**. In March 2021, the Province of South Holland launched a new **Development Fund** (in Dutch: Ontwikkelfonds) for energy cooperatives, to finance a part of the start-up costs for cooperative wind and (larger) solar projects. It specifically concerns the costs in the (risky) preliminary phase of a project. If the project fails, the loan is turned into a gift (Energie Samen Zuid-Holland, 2021).

Rung 4: Network Steering

The Province of South Holland states on their website that local energy initiatives ensure that the ownership of the energy transition is shifting to society. Decentralised generation of energy offers opportunities for a balanced distribution of benefits and burdens (Provincie Zuid-Holland, 2021). The role of the province is to connect initiatives from all over the province, to ensure that the frontrunners are visible, and to transfer their knowledge to new initiatives. The province performs the network steering role in the following practices:

Learning network

To enhance the knowledge exchange between CRE initiatives, the Province of South Holland established a learning network. It is a platform where knowledge sessions are organised to exchange experiences and knowledge between initiatives on various themes. Topics such as participation, cooperation between parties, and policy developments are addressed. The meetings are usually organised by an external expert. Initiatives in Rotterdam and The Hague have participated in several meetings. An interviewee expressed that they *“received a lot of knowledge from the learning network of the province”* (respondent R3).

Province as intermediate between initiative and municipality

One interviewee expressed that the province performs the role of an intermediate to improve the relationship between the municipality and an initiative.

Rung 5: Regulating

The Province of South Holland regulates initiatives with **policies** and the **regulations** related to the Energy Transition Subsidy (In Dutch: Lokale Initiatieven Energietransitie Subsidie). This research will not address the specific policies and regulations in detail.

To conclude, the Province of South Holland supports CRE initiatives mainly in the stimulating and network steering role. The Local Initiatives Energy Transition Subsidy (In Dutch: Lokale Initiatieven Energietransitie Subsidie) is an important tool for the province to support the plan development and

project preparation of CRE initiatives. The subsidy is often a supplement to start-up subsidies from the municipality. Moreover, the province encourages the exchange of knowledge between the initiatives in a learning network. Table 15, presents an overview of the roles and practices of the Province of South Holland in supporting CRE initiatives.

Table 15. Overview roles and practices of the Province of South Holland

Rung	Roles for local governments	Practices Province South Holland
5	Regulating	<ul style="list-style-type: none"> - Policies - Regulations
4	Network steering	<ul style="list-style-type: none"> - Set up a learning network with CRE initiatives and Municipalities - Province as intermediate between initiative and municipality
3	Stimulating	<ul style="list-style-type: none"> - Subsidy - Technical feasibility studies - Development fund
2	Facilitating/enabling	<ul style="list-style-type: none"> - Provide advice and expertise - Organising online webinars - Online information portal
1	Letting go	<ul style="list-style-type: none"> - Absent

6.1.1 Type and phase

In section 6.1, the type of roles and the practices the province fulfils in supporting CRE initiatives were discussed. This section discusses to what extent these roles and practices change for different types and phases of the initiatives In The Hague and Rotterdam.

As presented in sections 4.2.1 and 5.2.1, the CRE initiatives in The Hague and Rotterdam perform different activities and are in different phases of their development. Based on the interviews some practices of the province were different per type and/or phase of the initiatives. First, in the facilitative practices, no differences between the type and/or phase of the initiative were found. Second, in the stimulating role, there was no difference between the type of initiatives in receiving the subsidy. This can be attributed to the fact that the subsidy of the province is addressed to both initiatives executing collective solar projects and heat projects (Provincie Zuid Holland, 2021). However, it is noteworthy that the initiatives in Rotterdam and The Hague which received the subsidy of the province are almost all in the mature or upscaling phase. This may imply that more advanced initiatives receive more frequent a subsidy from the province. Finally, in the network steering and regulation role, no differences between the type and/or phase of the initiative were found. In the learning network, attention is paid to both heat projects and collective solar projects. According to provincial officials, the Province of South Holland has no policy framework in place to distinguish between the type and phase of an initiative. However, to apply for a subsidy, initiatives should be organised as a legal entity.

6.2 Barriers: perspective provincial officials

This section presents the barriers the provincial officials face in supporting CRE initiatives.

6.2.1 Representation neighbourhood

The representation of initiatives of their neighbourhood is perceived as a barrier by provincial officials. An official expressed that members of initiatives are often a step further than their neighbours. The question is *“how do you get citizens on board who are not involved in the transition at all?”* (respondent P4). In addition, officials noticed that initiatives are often in neighbourhoods with highly educated people. In these neighbourhoods the members of initiatives know how to approach the government. It is difficult to reach the residents in other neighbourhoods to make the energy transition more inclusive.

6.2.2 Lack of resources and capacity

In recent years, the number of initiatives has increased rapidly in the Province of South Holland. An official expressed that their department has a lack of capacity to support all the initiatives properly. In addition, an official mentions that the energy transition is expensive. *“without sufficient subsidies, the energy transition simply will not succeed”* (respondent P4).

6.2.3 Lack of supportive policies and regulations

According to a provincial official, the laws and regulations are not always up to date for the energy transition. Moreover, an official has the feeling that the application process for a subsidy is unnecessarily difficult.

6.2.4 Professionalism initiatives

According to a provincial official initiatives are sometimes too much focused on one part of the energy transition. *“For example, some initiatives are focussed on one technological solution, such as aqua thermal energy. While participation, to get other residents on board is just as important”* (respondent P2). However, an official expressed that as a government you can't expect a professional organisation from an initiative with volunteers.

6.2.4 Mistrust between residents and the municipality/province

According to provincial officials, residents and officials must have a mutual understanding of each other's worlds. Therefore, residents should be more involved in the world of the municipality and the province. An official expressed that *“a lot of residents just don't know how this world works”* (respondent P3).

6.2.5 Role CRE initiatives in the energy transition

The support of CRE initiatives concerns only a small part of the energy transition. According to an official, it is sometimes difficult to place the role of CRE initiatives in the bigger picture of the energy transition. An official sometimes wonders *“what the role is of local energy initiatives in the energy transition and how should we support them?”* (respondent P1).

To conclude, to what extent these barriers relate to the barriers of the case studies of the municipalities is discussed in the comparative analysis (chapter 7).

6.3 Ideal roles of the regional government: perspective provincial officials

This section presents the ideal roles of the regional government in supporting CRE initiatives according to provincial officials. During the interviews with the provincial officials, the analytical framework of this research was presented as input for the respondents to describe the ideal role of the government in supporting CRE initiatives.

6.4.1 Customisation per initiative

Provincial officials expressed that the type of support to CRE initiatives depends on the characteristics of the initiative. However, the role 'letting go' is not applicable because the government must stay in control. In addition, an official of the province states that the connection of an initiative with the neighbourhood is a precondition for providing support. *"If an initiative has no connection with the neighbourhood the government has to regulate the initiative otherwise the government will provide subsidy to an initiative which does not benefit the neighbourhood"* (respondent P1).

6.4.2 Facilitation, stimulation, and network steering

According to three provincial officials, facilitation and stimulation with offering advice, subsidies, and create a network is currently the most ideal role of the province. An official expressed that *"in the near future, initiatives should be facilitated and stimulated, but in 15 years' time, you might be able to let them go"* (respondent P4). Another official expressed that the challenge is to reach the residents in neighbourhoods where no initiatives are established. *"In these neighbourhoods you have to combine the network steering and stimulating roles much more"* (respondent P1).

6.4.3 Regulation

A governmental official of the province believes that if the government wants to speed up the energy transition, there should be more regulation to force everyone to invest in sustainably.

To conclude, to what extent the ideal roles of the province relate to the ideal roles expressed in the case studies of the municipalities is discussed in the comparative analysis (chapter 7).

6.4 Conclusion: Province of South Holland

To conclude, initiatives representatives expressed that cooperation with the province is better than with the municipality. Interviewees stated that the province is at more distance and more progressive than the municipalities. The province mainly performs a stimulating role by offering the Energy Transition Subsidy (In Dutch: Lokale Initiatieven Energietransitie Subsidie) and the network steering role with setting up a learning network in the province. The main barriers the provincial officials face are related to the professionalism of initiatives, the lack of capacity and resources, and the representation of initiatives in their neighbourhood. Finally, according to the officials, the ideal role of the province depends on the characteristics of the initiative. Except for the role of letting go, all the four roles of facilitation, stimulation, network steering, and regulating are relevant in supporting the CRE initiatives.

7. Comparative analysis

This chapter compares and synthesises the results of the case studies of the two municipalities and the province. The expert interviews are used as input for the comparative analysis, to verify the generalisability of the results to other regions in the Netherlands. First, the different roles of the two intermediary organisations are compared and analysed in section 7.1. Subsequently, in section 7.2 the roles and practices of the local and regional governments are compared for similarities and differences. In sections 7.3 and 7.4, the barriers the CRE initiatives and intermediary organisations face in the interaction with the local and regional government and the barriers government officials perceive in supporting CRE initiatives are compared. Finally, the ideal roles of local and regional governments in supporting CRE initiatives according to the municipal officials, provincial officials, CRE initiative representatives, and intermediary organisation representatives are compared in sections 7.5 and 7.6.

7.1 Comparing the intermediary organisations

This section compares the two intermediary organisations in The Hague and Rotterdam for similarities and differences. Moreover, the implications of the intermediary organisations for the role of the local and regional government are assessed based on the interviews with the initiatives representatives, governmental officials, and experts.

The intermediary organisations differ from each other on two main points. First, Duurzaam Den Haag is a foundation that is co-founded and mostly financed by the Municipality of The Hague, and Energie van Rotterdam is initiated and established by the CRE initiatives in Rotterdam. This implies that Duurzaam Den Haag is more dependent on the municipality than Energie van Rotterdam. Second, the main focus of Duurzaam Den Haag is on activities in the heat transition with the Working Group Sustainable Heat (in Dutch: Werkgroep Duurzame Haagse Warmte). In contrast, Energie van Rotterdam has declared that it will focus on collective solar projects for the next five years.

As for similarities, both organisations have similar supportive practices: they support initiatives with knowledge, they connect initiatives, they enhance knowledge exchange between the initiatives, and they function as a point of contact towards the municipality and province. The intermediary organisations ensure that the initiatives are united and can exert more influence on the local and regional government. Table 16 presents the main differences and similarities of the intermediary organisations.

Table 16. overview main differences and similarities intermediary organisations

Duurzaam Den Haag	Energie van Rotterdam
Differences	
Co-founded by the municipality	Founded by residents
Focus heat initiatives	Focus collective solar projects
Similarities	
Point of contact municipality and province	
Enhance knowledge exchange between initiatives	
Provide advice and knowledge	
Connect initiatives	

The expert interviews confirm the differences between the intermediary organisations. Duurzaam Den focuses on the knowledge exchange between heat initiatives in The Hague and Energie van Rotterdam on professionalise the initiatives and increase the number of collective solar roofs in Rotterdam. According to expert Schuurs (interview 2021), a limitation of Duurzaam Den Haag is that they for the most part financed by the municipality. This has made the intermediary organisation dependent on the municipality. Moreover, expert Schuurs (interview 2021) argues that the initiatives in The Hague have reached a phase in which they need more than knowledge exchange. There is a need for a project office with the knowledge and capacity to accelerate the development of the initiatives. According to the experts, a project office that is needed in The Hague, is an organisation similar to Energie van Rotterdam. The difference between the two municipalities is that in Rotterdam the municipality is willing to invest a lot of money in Energie van Rotterdam, which is not yet the case in The Hague.

To conclude, expert Hoppe (interview 2021) emphasises the relevance of intermediary organisations in supporting CRE initiatives in the Netherlands. Expert Schwenke (interview 2021) expressed that without intermediary organisations: *“The cooperative movement will be reduced to one or two solar roofs and perhaps a few energy coaches”*. To achieve the goals in the Climate Agreement to obtain 50% ownership by the local environment (citizens and businesses) in 2030, intermediary organisations are decisive (Schwenke, interview 2021). The intermediary organisations in The Hague and Rotterdam are pivotal in improving the interaction between the local and regional government and the CRE initiatives because they serve as a point of contact, enhance knowledge exchange and professionalise the movement. Although, both organisations can learn from each other. In The Hague, interviewees argued that Duurzaam Den Haag should also focus to develop a more standardised approach for collective solar projects to professionals the initiatives. And in Rotterdam, the initiatives are exploring their role in the energy transition. For this reason, Energie van Rotterdam could also focus on activities in the heat transition, with for example establishing a working group.

7.2 Comparing the roles and practices of the local and regional government

This section compares the roles and practices of the municipalities and the province in supporting CRE initiatives. Table 17 presents the similarities and differences in the roles and practices of the municipalities and the province. The differences and similarities are discussed for each role of the analytical framework.

Table 17. Comparing the practices and roles of the municipalities and the province

Rung	Roles for Local governments	Practices Municipality of The Hague	Practices Municipality of Rotterdam	Practices Province South Holland
5	Regulating	- Regulations	- Regulations	- Regulations
		- Policies	- Policies	- Policies
4	Network steering	- Partnership between the CRE initiative and municipality		
				- Learning network CRE initiatives and municipalities
				- Province as intermediate between initiative and municipality
3	Stimulating	- Subsidy	- Subsidy	- Subsidy
		- Technical feasibility studies	- Technical feasibility studies	- Technical feasibility studies
		- Provide roofs for collective solar projects	- Provide roofs for collective solar projects	
		-		
		- Prize competition		
		- Organise a working group		
		- Municipality as consumer energy cooperation		
		- Visiting meetings initiative		
		- Granting legal permits		
		- Training energy coaches		
		- Affordable loans		
		- Support in finding project funding		
2	Facilitating/enabling	- Provide personal advice and expertise	- Provide advice and expertise	- Provide advice and expertise
		- Legal and regulatory support	- Legal and regulatory support	- Legal and regulatory support
		- Online information portal	- Online information portal	- Online information portal
		- Organising information meetings		Organising online seminars
		-		
		- Online consultation hour Councillor		
1	Letting go	- Absent	- Absent	- Absent

Rung 1: Letting go

All the interviewed CRE initiatives representatives received support from the municipality. In addition, some CRE initiatives received support from the province. Moreover, both municipalities and the province emphasise the value of citizen initiatives on their website and monitor the initiatives. Hence, the role of letting go is not applicable for the local and regional governments in this research.

Rung 2: Facilitating

The main facilitative practices offered by both municipalities and the province are similar. Based on the interviews and policy documents, both municipalities and the province **provide advice and expertise, legal and regulatory support**, and have an **online information portal**. The Municipality of The Hague distinguishes itself from the Municipality of Rotterdam and Province of South Holland by offering an **online consultation hour with the councillor** and **media attention for the initiatives** on their website. The province organises **online webinars** to inform CRE initiatives in South-holland on various topics. As well, the Municipality of The Hague **organises information meetings**. The interviews indicate that these types of meetings are not organised in Rotterdam. To conclude, the facilitating role is well performed by both municipalities and the province. Officials are accessible if initiatives have questions and sufficient information can be found on the websites of the municipalities and province.

Rung 3: Stimulating

In both municipalities and the province, granting a **subsidy** is the most common way of direct support. At the municipal level, the subsidies are small-scale and mostly used to establish initiatives, conduct technical feasibility studies and organise events. An important difference between the municipalities is that in Rotterdam there is no standard subsidy scheme for CRE initiatives. The amount of subsidy is assessed for each initiative. However, Rotterdam runs a subsidy scheme for the project CityLab010. This subsidy scheme is not exclusively available for CRE initiatives but entrepreneurs, initiatives, and organisations engaged with social innovation in Rotterdam. Moreover, in Rotterdam, the intermediary organisation is supported by the municipality with **finding project funding**. In The Hague, the municipality supports new initiatives with a start subsidy of €5.000. Almost all CRE initiatives in The Hague received this subsidy. In addition to the start subsidy, the Municipality of The Hague organises every year The Neighbourhood Energy Challenge (in Dutch: Energie uit de Wijk Challenge). In this **prize competition** the winners receive prize money and support with the implementation of their project. In addition to the start-up subsidy of the municipalities, CRE initiatives can apply for the Local Initiatives Subsidy (In Dutch: Lokale Initiatieven Energietransitie Subsidie) of the Province of South Holland. According to expert Schwenke (interview 2021), this subsidy is an important tool for the development and upscaling of CRE initiatives. The maximum subsidy per project is €75.000 and covers a maximum of 50% of the project preparation costs. Initiatives in both municipalities made use of this subsidy and hired an advisor, started a collective solar project, conducted a technical feasibility study, or organised an event. In both municipalities, the subsidy scheme of the province is promoted on their websites. Furthermore, in both municipalities' **roofs** were offered to CRE initiatives to install collective solar projects. However, among the initiatives in both municipalities, there is a lot of frustration that too few roofs are made available as discussed in sections 4.3 and 5.3. The municipalities intend to make more roofs available with the 'Year of the Roof' in The Hague and the Climate Deal to realise 90 cooperative solar roofs in Rotterdam. Finally, The Hague distinguishes itself from Rotterdam with organising in collaboration with Duurzaam Den Haag, the **Working Group Sustainable Heat** (in Dutch: Werkgroep Duurzame Haagse Warmte), and the **training of energy coaches**. Moreover, the

Municipality of The Hague is for 10% of their electricity customer of the initiative Haagse Stroom, municipal officials **visit meetings of initiatives** to share and obtain information and the municipality granted an initiative a **legal permit** to install a geothermal heat pump system. To conclude, in the stimulating role, The Hague offers a range of different types of support. This illustrates that The Hague in comparison with Rotterdam is more advanced in stimulating initiatives. This is also reflected in the fact that Rotterdam has no standard subsidy scheme for CRE initiatives in place. Moreover, the main limitation of the stimulating role is the limited roofs offered to initiatives to install collective solar panels.

Rung 4: Network Steering

The Province of South Holland aims to connect initiatives all over the province to enhance knowledge exchange between the initiatives. Therefore, the province created a **learning network** in which meetings are organised to exchange experiences and knowledge between the initiatives. Moreover, in the network steering role, the province also functions as an **intermediate between the municipality and initiatives** to arbitrate in conflicts. Based on the interviews and secondary data the municipalities do not offer practices linked to the network steering role. Except from one example in The Hague, where the **municipality signed in collaboration with Eneco a declaration to cooperate** with Hernieuwbare Warmte Ypenburg (HWY). This is the only example in both municipalities where collaboration between an initiative and the municipality is formalised. To conclude, the network steering role is mainly fulfilled by the province. Based on the interviews, this role is well performed by the province because the initiatives gain and exchange a lot of knowledge in the learning network.

Rung 5: Regulating

The regulating role is the traditional role of local and regional governments to enforce regulations and sanctions in the case of noncompliance. As the government is politically responsible for the energy transition the municipalities and the province have **policies and regulations** in place to steer the CRE initiatives. The national Climate Agreement resulted in the advent of Regional Energy Strategies (RES) in which government officials must draft a regional energy transition strategy. In addition, the municipalities must draft the heat transition vision heat (in Dutch: Lokale Transitievisie Warmte). In this vision, municipal officials create a strategy on how and when to phase out gas in the different neighbourhoods. In the current policies of the municipalities and provinces too little attention is paid to the role CRE initiatives can play in the energy transition. The policies of the local and regional governments are pivotal to enhance the development of initiatives. Moreover, the interviewees expressed that in the regulating role, obtaining permits is perceived as an obstacle.

To conclude, the comparison between the municipalities shows differences in the performance of the various roles. In both municipalities, the stimulating role emerges as the most important role as the initiatives need roofs and subsidies to be able to start projects. The difference between the municipalities is that The Hague offers more and different practices to support CRE initiatives. This illustrates that The Hague is more advanced in supporting CRE initiatives. This can be explained because most initiatives in The Hague are already in the mature phase and have been in place for more than five years. In Rotterdam, the municipality is still exploring and pioneering how to offer support in a more structured way. Currently, the Municipality of Rotterdam has no standard subsidy scheme for CRE initiatives in place.

The comparison of the municipalities and the province shows that they generally have a complementary role. The subsidy of the province is designed to supplement the start-up subsidy from the municipality. However, the facilitating role is similar to that of the municipalities. A provincial official expressed that they are sometimes reluctant because they do not want to get in the way of the municipalities. Finally, the province distinguishes itself in the network steering role from the municipalities, with connecting CRE initiatives in a learning network. This role also fits well with the regional government, as it can connect initiatives from all over the province.

7.2.1 Type and phase

This section discusses and compares to what extent the support of the municipalities and the province differs per type and phase of CRE initiatives.

This research showed that both the municipalities and the province almost make no distinction in the type of support between initiatives that realise heat projects or collective solar projects. This can be explained because in the different roles the practices apply to both types of initiatives. The only practices that are specific to a type of initiative are the provision of roofs (collective solar projects) and the working group sustainable heat (heat projects). Regarding the phase of the initiatives, differences were observed. In both municipalities and the province, initiatives in the mature phase receive more frequent and extensive support. This can be explained because initiatives that realising projects need more (financial) resources to implement projects. Therefore, initiatives in the mature and upscaling phase received more legal support, subsidies, and roofs from the local and regional governments. For example, the initiatives in Rotterdam and The Hague that received the subsidy of the province are almost all in the mature or upscaling phase.

The experts indicate that it is important for governments to distinguish between the type and phase in supporting CRE initiatives. Expert Schwenke (interview, 2021) expressed that initiatives performing heat projects and collective solar projects require a different role from the local and regional government. In heat projects, the initiatives must work together with the municipality in drafting energy plans for their neighbourhood or district. Although, in collective solar roofs, as soon as the initiatives have a roof, they can work more independently of the municipality. According to experts Hoppe (interview 2021) and Schwenke (interview 2021) also the distinction between different phases of initiatives is important. Hoppe (interview 2021) expressed that the phase is becoming even more important as more initiatives reaching the mature and upscaling phase. When an initiative becomes more professional, the government often finds it difficult because the initiative no longer fits into the category of a voluntary organisation. From the perspective of the local and regional government, an initiative becomes a market player and has to deal with tendering rules (Schuurs, interview 2021; Schwenke, interview 2021). Schuurs (interview, 2021) expressed that the problem is that many initiatives are in between a voluntary organisation and a market party. The initiative has turnover but has a public purpose. This new type of initiative does not yet fit in current governmental policies.

To conclude, in both municipalities and the province, the officials indicated that there is no policy on CRE initiatives that differentiate between the support per type and/or phase of the initiatives. The experts emphasised the value of making this policy. Finally, the authorities need to explore how to deal with initiatives that are becoming a professional organisation.

7.3 Comparing barriers: perspective CRE initiatives and intermediary organisations

This section compares the barriers that the CRE initiatives and intermediary organisations face in the interaction with the municipalities. In addition, expert interviews were used as input for the comparative analysis. Table 18 presents an overview of the barriers faced by the CRE initiatives and intermediary organisations in The Hague and Rotterdam.

Table 18. Comparing the barriers: perspective CRE initiatives and intermediary organisations

Barriers	Relevance ¹ The Hague	Relevance ¹ Rotterdam
Internal alignment	6 / 10	5 / 6
Bureaucracy (lack of flexibility)	7 / 10	4 / 6
Lack of participation and communication	8 / 10	3 / 6
Lack of vision and focus on achieving results	8 / 10	3 / 6
Underestimating the expertise and professionalism of the initiatives	5 / 10	3 / 6
Lack of resources and capacity	4 / 10	1 / 6
Lack of knowledge	4 / 10	1 / 6
Lack of supportive policies	3 / 10	1 / 6
Keep money within the local economy	0 / 10	4 / 6
Ambition is not in line with the support	5 / 10	0 / 6

¹ Relevance expressed as the frequency of barriers mentioned by different interviewees

In general, the barriers CRE initiatives and intermediary organisations face in the interaction with the municipalities do largely correspond. The barriers that are most frequently mentioned in both municipalities are a lack of **internal alignment** and the **lack of flexibility** of the municipality. These are well-known barriers in the interaction with municipalities as they are large organisations with political responsibility. Expert Hoppe (2021) expressed that the internal alignment of the municipality will only be improved if councillors demand it. Integral working in the municipality is often still problematic. Regarding the lack of flexibility, Hoppe (2021) expressed that civil servants are trained to perform certain tasks within a certain institutional environment. Also, **lack of participation and communication** is often mentioned as a barrier in both municipalities. According to expert Schwenke (interview 2021), it is remarkable that the lack of participation is a barrier in both municipalities. In general, participation is only a barrier for initiatives performing heat projects. However, the initiatives in Rotterdam do not (yet) perform heat projects but they provided feedback on the Transition Vision Heat (in Dutch: Transitievisie Warmte). Hoppe (interview 2021) expressed that the lack of participation is also reflected in the drafting of the Regional Energy Strategies (RES). Many municipalities are not willing or do not know how to organise participation. Most of the time, the decision has already been made and in the end, it is submitted for consultation or approval to a few citizens (Hoppe, interview 2021). The lack of participation is not only relevant in supporting CRE initiatives, but also in other policy fields. Furthermore, the barrier **lack of vision and focus on achieving results** is also frequently mentioned in both municipalities. Schwenke (2021) recognises this barrier and argues that municipalities often have

websites and campaigns such as the ‘Year of the Roof’ in The Hague. These actions often don’t deliver concrete results: *“If they had used the money from that communication campaign to hire a process manager, they would have had ten roofs by now”* (Schwenke, interview 2021). Another frequently mentioned barrier in both municipalities is **underestimating the expertise and professionalism of the initiatives**. According to Hoppe (interview 2021), the initiatives often have more knowledge of the neighbourhood than the authorities. However, municipalities often still have doubts about the continuity and professionalism of initiatives.

In The Hague, some respondents mentioned a **lack of resources and capacity, lack of knowledge, and lack of supportive policies** as a barrier. In Rotterdam, only one respondent mentioned the corresponding barriers. This difference may be explained by the phase of the initiatives in Rotterdam. In Rotterdam four (out of five) initiatives are in the initial or growing phase, and still have to start the first collective solar project. With the implementation of these projects, they could face one of these barriers. Expert Hoppe (interview 2021) expressed that municipalities have a lack of capacity, experience, and knowledge about the energy transition. Often external agencies are hired, but then the knowledge is not embedded in the municipal organisation.

Two barriers were mentioned in one of the municipalities. The barrier **ambition is not in line with the support** was only mentioned in The Hague. This can be explained as the Municipality of The Hague has set its goal to be climate neutral in 2030. According to initiative representatives, this goal is way too ambitious and does not correspond to the current level of support to CRE initiatives. In contrast to The Hague, The Municipality of Rotterdam has set the goal to be climate neutral in 2050. According to Hoppe (interview 2021), it is popular for a municipality to set goals to become climate neutral. However, how to achieve these goals and what it means for policies is often unclear. The barrier to **keep money within the local economy** was only mentioned by initiatives in Rotterdam. This can be attributed to the focus of the initiatives on the generation of renewable energy with collective solar projects. The ambition of Energie van Rotterdam is to install 90 collective solar roofs in 2025. This ambition can only be realised if the municipality financially supports the initiatives and not only cooperates with larger companies. Hoppe (interview 2021) expects that the locked-in of municipalities with companies will remain because the financial and economic interests are still dominant in the Netherlands. *“The municipality simply takes its citizens less seriously than businesses”* (Hoppe, interview 2021).

To conclude, the most frequently mentioned barriers that limit the supportive role of the municipalities are internal alignment, bureaucracy, and lack of participation. These barriers are not easy to solve for the municipality, as they are well-known problems of the municipality in several policy areas and inherent to the size of the municipal organisation. The barrier lack of vision and focus on achieving results can be improved relatively quickly as it indicates that municipalities should focus on achieving concrete results rather than on communication campaigns. Finally, the municipality must acknowledge the professionalism and knowledge of initiatives. The knowledge of the members of the initiatives in their neighbourhood should be utilised to achieve results in the energy transition.

7.4 Comparing barriers: perspective local and regional government

This section compares the barriers municipal and provincial officials face in supporting CRE initiatives. Table 19 presents an overview of the similarities and differences between the barriers the municipal and provincial officials face in supporting CRE initiatives.

Table 19. Comparing the barriers: perspective government officials

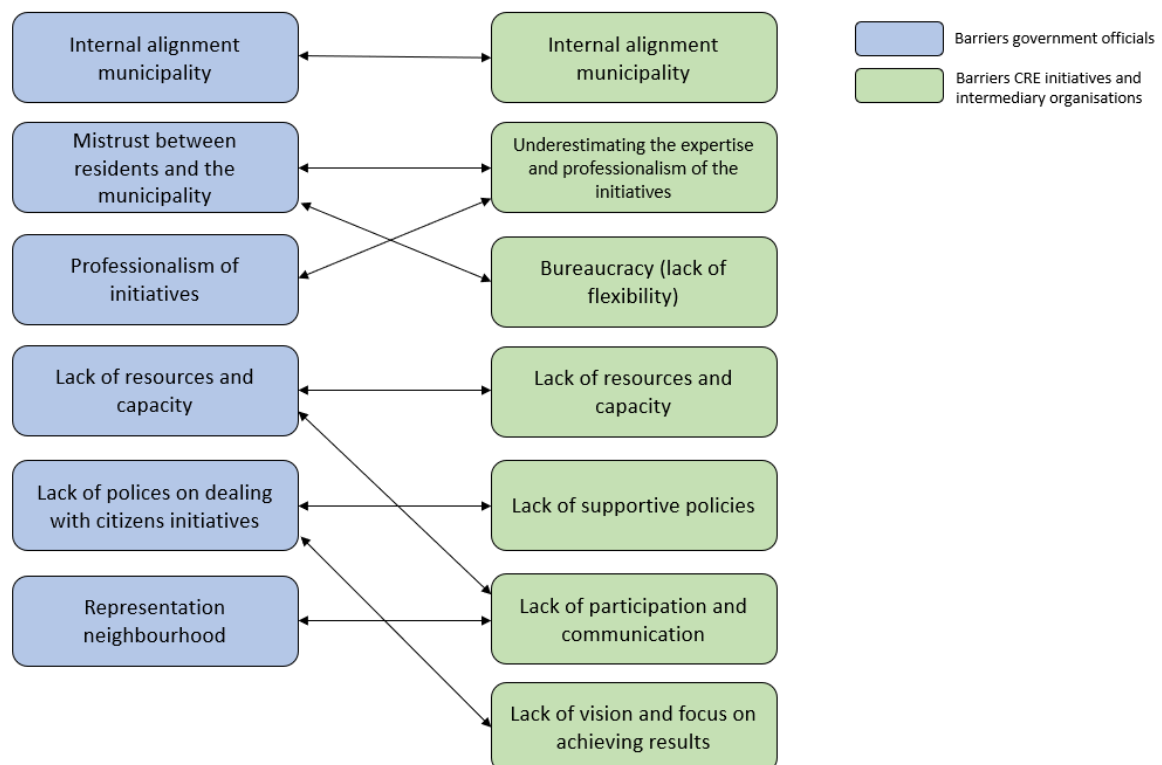
Barriers	The Hague	Rotterdam	South Holland
Lack of resources and capacity	Green	Green	Green
Mistrust between residents and the municipality	Green	Green	Green
Professionalism of initiatives	Green	Red	Green
Representation neighbourhood	Green	Red	Green
Lack of policies on dealing with citizens initiatives	Green	Red	Green
Internal alignment municipality	Green	Green	Red
Lack of knowledge	Red	Green	Red
Role CRE initiatives in the energy transition	Red	Red	Green

First, the barriers **lack of resources and capacity**, and **mistrust between residents and the municipality** were mentioned in both municipalities and the province. According to expert Hoppe (interview 2021), on the municipal level, the lack of resources and capacity is a barrier throughout the Netherlands. Due to ten years of liberal policies, municipalities and other local authorities have been financially cut back by the central government. Second, the mistrust between residents and the municipality is mentioned as a barrier at the municipal and provincial levels. Expert Schuurs (interview 2021) expressed that the municipality and the initiatives have to enter into a dialogue on how to organise cooperation. The municipality is formed according to clear procedures, whereas the citizens' initiatives are driven by activism and emotions with unformed and non-hierarchical organisation form. The relationship between the municipality and an initiative has to develop over time and can gradually grow towards a partnership (Schuurs, interview 2021).

Except for the two barriers mentioned above, the perceived barriers in supporting CRE initiatives are different. The barriers **professionalism of initiatives**, **representation neighbourhood** and, **lack of policies on dealing with citizens initiatives** were only mentioned by officials in The Hague and the Province of South Holland. An explanation that the professionalism and the representation of the initiatives are not mentioned as a barrier in Rotterdam may be attributed to the arrival of the intermediary organisation Energie van Rotterdam. Energie van Rotterdam aims to professionalise the bottom-up citizen movement and make the projects more inclusive. Subsequently, the barrier of **internal alignment municipality** is logically only mentioned in both municipalities. It is noteworthy that this barrier is mentioned by both initiative representatives (section 7.3) and the municipal officials. According to Schwenke (interview 2021), the internal alignment of the municipalities is a common problem in the Netherlands. As an initiative, you have to deal with the Department of Sustainability and the Department of Real Estate. The Department of Sustainability is often a supporter of citizen projects but faces resistance from the Department of Real Estate (Schwenke, interview 2021).

To conclude, Figure 5 compares the most frequently mentioned barriers from the perspective of the initiatives and intermediary organisations with the perspective of government officials. Remarkably, most barriers of both perspectives are similar or related to each other. First, the internal alignment of the municipality and the lack of resources and capacity is considered as a barrier by both parties. Both the initiatives and the officials of the sustainability department suffer from a lack of coordination between the different departments of the municipality. The challenge of the municipality is to improve the internal alignment of the different departments. Second, the mistrust between residents and the municipality can partly be explained by the feeling of the interviewees that the expertise of the initiatives is underestimated. Moreover, the lack of flexibility (bureaucracy) also increases the mistrust in the municipality. The challenge of the municipality is to increase the understanding of the political world of the municipality among the members of the CRE initiatives. Third, the municipality finds it difficult how to deal with initiatives that become a professional party. Officials find it difficult to see an initiative as a professional party because then the same tendering rules apply as for companies. Therefore, the municipalities are exploring how to deal with the financial compensation of volunteers. Fourth, the lack of policies on dealing with citizen initiatives is a barrier for both parties. The challenge of the municipality is to develop such policies. Fifth, the lack of representation of initiatives in their neighbourhood may be related to the lack of participation of initiatives in the plans of the municipality. According to officials, the municipality must be there for all residents in the neighbourhood. Therefore, the municipality sometimes finds it difficult to cooperate with an initiative as the residents which are not a member of an initiative also should be involved.

Figure 5. Comparing the barriers of the government officials with the barriers of the CRE initiatives and intermediary organisations



7.5 Comparing the Ideal roles: perspective CRE initiatives and intermediary organisations

This section compares the ideal roles of the local and regional governments according to the CRE initiatives and intermediary organisations in Rotterdam and The Hague. Table 20 presents an overview of the perceived ideal roles of the government in supporting CRE initiatives in The Hague and Rotterdam.

Table 20. Comparing the ideal roles: perspective CRE initiatives and intermediary organisations

Ideal role	Relevance ¹ The Hague	Relevance ¹ Rotterdam
Equal partners (co-creation)	6 / 10	4 / 6
Facilitation and stimulation	5 / 10	5 / 6
Flexible government	3 / 10	3 / 6
Clear ambition and vision	3 / 10	2 / 6
Take the lead	4 / 10	0 / 6
Coordination	1 / 10	1 / 6
Legitimise initiatives	0 / 10	2 / 6
Not frustrating initiatives	2 / 10	0 / 6

¹ Relevance expressed as the frequency of ideal roles mentioned by different interviewees

The perceived ideal roles in both municipalities share a lot of similarities. First, initiatives in both municipalities consider that the ideal role of the local government is working on the level of **co-creation as equal partners**. In an open and ongoing dialogue, the municipality and the initiatives should work together and exchange knowledge. In The Hague, there is one example of an initiative that works as an equal partner with the municipality using a ‘declaration to cooperate’. According to Hoppe (interview, 2021) municipalities should eventually allow more room for co-creation and co-production of energy and climate services with citizens. However, governmental officials often perceive the co-production and co-creation with CRE initiatives as a threat. The feeling prevails that residents want to take over tasks of the municipality. Working together with this citizens' initiative requires a civil servant with a kind of new profile, in a more supportive and proactive role towards society instead of just continuing to perform their role within the existing laws and regulations (Hoppe, interview, 2021).

The second most frequently mentioned ideal role in both municipalities is the **facilitation and stimulation** of initiatives with funding, roofs to install collective solar projects, and supportive policies. The desire of initiative representatives for a better implementation of this role is also reflected in the barriers, lack of resources, and lack of supportive policies. Schwenke (interview 2021) argues that stimulation of the local and regional government is pivotal for an initiative to grow and develop. Third, some interviewees indicated that the local and regional governments should be more **flexible** and develop a **vision with clear ambitions**. Hoppe (interview, 2021) expressed that the flexibility of the municipality is restricted by the political responsibility of the officials and to what the council permits. Residents often want faster changes than the municipality: *“The different speeds often cause frustration”* (Hoppe, interview, 2021). Fourth, it is remarkable that the role of **taking the lead** is only mentioned as an ideal role in The Hague. This can be attributed to the fact that in The Hague the initiatives perform more activities regarding the heat transition. According to Schwenke (interview 2021) in the heat transition, the local government should take the lead because they have to draft the

transition vision heat (In Dutch: Transitievisie Warmte). However, the municipalities are now often drafting the plans with the support of external agencies without properly involving the residents (Schwenke, interview, 2021). Fifth, initiative representatives in both municipalities perceive a **coordinating role**, as the ideal role of the local and regional government to connect all the different initiatives in a network. Sixth, in Rotterdam, the intermediary organisation and an initiative perceive as the ideal role of the local and regional government to **legitimise** the bottom-up citizen movement of CRE initiatives. This ideal role was not mentioned in The Hague and this may be attributed to the media attention of initiatives on the website of the municipality. Finally, two representatives in The Hague only expect the municipality **not to frustrate** the initiatives. The municipality should not hamper the initiatives in their development but give them the room to develop themselves.

To conclude, according to the representatives of the CRE initiatives and the intermediary organisations the ideal government has a clear vision and ambition, is flexible, and supports initiatives in the facilitating and stimulating role. Moreover, the initiatives would like to be acknowledged as a partner of the municipality to together in a process of co-creation achieve results in the neighbourhoods.

7.6 Comparing the ideal roles: perspective government

This section compares the ideal roles of the local and regional government according to the government officials in The Hague, Rotterdam, and the Province of South Holland. Table 21 compares the ideal roles of the local and regional governments.

Table 21. Comparing the ideal roles: perspective government officials

Rung	Roles for Local governments	Officials Municipality of The Hague ¹	Officials Municipality of Rotterdam ¹	Officials Province of South Holland ¹
5	Regulating		1	1
4	Network Steering	1	1	1
3	Stimulating	2	1	3
2	Facilitating/ Enabling	2	1	3
1	Letting go			

¹ Relevance expressed as the frequency of ideal roles mentioned by different governmental officials

The governmental officials in The Hague and Province South Holland expressed that the ideal role of the government should **depend on the characteristics of the initiative and the neighbourhood**. For each initiative, the type of support must be assessed. Expert Schuurs (interview, 2021) agrees with this vision and expressed that the support not only depends on the characteristics of the initiative but also on the stage of the relationship between the initiative and the local government. If the ambitions of the municipality and an initiative match, the municipality is more likely to support the initiative with for example subsidies.

According to the officials in supporting initiatives four roles of the ladder of government participation can be useful. First, the role of **letting go** is not relevant in this phase of the energy transition because the regional and local governments want to stay in control. Expert Hoppe (interview, 2021) recognised that the municipalities in the Netherlands are not yet ready to let the initiatives go. Second, the **facilitating** role is perceived as the first step to support new initiatives by providing advice and expertise. Some officials expressed that the role of the municipality has to go beyond facilitation to

ensure that initiatives also emerge in neighbourhoods where there are no initiatives yet. In the **stimulating** role, the government should try to convince residents to start an initiative. Moreover, the municipality and province consider subsidies as an important tool for stimulating initiatives. According to Schuurs (interview, 2021), the rationale behind stimulating CRE initiatives as a municipal and provincial organisation is to add value to the public domain. Fourth, the **network steering** role is essential to keep an overview of all the initiatives and connect the initiatives in a network. This role is primarily performed by the province of South Holland with creating a learning network as discussed in section 7.2. According to Hoppe (interview, 2021), the strength of the networks depends on the willingness of CRE initiatives to share knowledge and cooperate. Therefore, to perform the role of network steering, the local and regional governments are dependent on the CRE initiatives. In the Province of South Holland, the learning network is a success as many initiatives joined the network. Finally, the **regulating** role is not frequently mentioned as an ideal role of the local or regional government. However, in Rotterdam, an official argues that in supporting CRE initiatives the municipality should have a clear policy framework in place. Moreover, one provincial official argues that if the government wants to speed up the energy transition, regulation should force residents and businesses to invest in sustainability. According to Schwenke (interview, 2021), the government must be careful not to interfere too much with the initiatives in the roles of network steering and regulating as the ownership of the initiatives must remain with the members.

To conclude, when comparing the ideal roles of the perspective of the officials with the perspective of the initiative and intermediary representatives, several things stand out. First, both the officials and the representatives expressed that the ideal roles of the government are facilitating and stimulating initiatives. Currently, these roles are also the most frequently used in both municipalities. However, the barriers indicate that the initiative representatives are not satisfied with the implementation of the roles. To give an example, there is a lot of criticism of the municipality for not making enough roofs available to install collective solar projects. Moreover, the ideal roles indicate that the municipality and province would like to keep in control of the energy transition. The initiatives indicate that the government should take the lead but acknowledge the initiatives as an important actor in the energy transition. Eventually, the initiatives want to work together with the municipality by developing joint strategies to achieve results in the neighbourhoods. The cooperation with initiatives is still new for government officials and sometimes perceived as a threat to their work. Finally, the initiative representatives would like the government to be more flexible and create a clear vision for the energy transition.

8. Discussion

This chapter reflects on the limitations of this study and compares the empirical results of the case studies of the municipalities and the province with the scientific literature. In section 8.1 the practices of the municipalities and the province are compared with the results of the literature review. Subsequently, in section 8.2 potential adjustments to the analytical framework of this research are proposed. In section 8.3 the differentiation of government support between the types and phases of the initiatives is discussed. Moreover, section 8.4 presents the added value of this research to the literature on citizen initiatives. Finally, the limitations of this study are discussed in section 8.5.

8.1 Comparing the empirical results with the literature review

In this section, the most important similarities and differences with the results of the literature review are discussed. Most practices of the municipalities and the province in the empirical results were also found in the literature. Table 22 shows the results of the literature review compared with the practices of the municipalities and the province in supporting CRE initiatives. The green colour indicates that the practices of the empirical results match with the results of the literature review.

Table 22. Comparing the literature review with the empirical results

Rung	Roles for Local governments	Practices of local and regional government roles in CRE initiatives	Practices of the Municipality of The Hague	Practices of the Municipality of Rotterdam	Practices of the Province South Holland		
5	Regulating	Policies and regulations targeting CRE initiatives					
		CRE initiative led and owned by the local government					
		Participation and co-creation of the vision and strategy of a CRE pilot					
		Civic participation requirement in low-carbon energy installation					
		Adapting spatial planning programs					
		Adapting conditions of construction fees					
4	Network steering	Partnership between the CRE initiative and local government					
		Creating learning capacity were both the local government and CRE initiatives learn from each other					
		Involvement of CRE initiatives in the policy process					
		Local governments in collaboration with initiatives set targets on locally produced renewable energy					
		CRE initiatives as means to achieve policy goals on renewable energy					
		Local government creates a network with other local government and initiatives to advocate for institutional changes and/or new policy schemes on higher government levels that enable CRE initiatives					
		Local government invites citizens with certain profile attributes to establish a CRE initiative					
		Local government is co-owner of solar PV farm					
		Enrichment literature					
		Province functions as intermediary between the municipality and CRE initiatives					
3	Stimulating	Financial support through loans and subsidies					
		Technical feasibility studies					
		Give access to network of local government					
		Low interest rate loans					
		Allow solar panels on governmental buildings					

		Facilitate knowledge transfer					
		Municipality as customer of an energy cooperation					
		Local government established a working group with CRE initiatives					
		Granting legal permits					
		Capacity building, training to improve the skills of members of CRE initiatives					
		Organise prize competitions for CRE initiatives					
		Demonstrate good practice by installing small-scale PV systems					
		Providing physical space to CRE initiatives					
		Sub-regional feed-in-tariffs					
		Support local experiments with renewable energy technology					
		Fee reductions					
		Providing land for a wind farm					
		Enrichment literature					
		Support in finding project funding					
2	Facilitating/ enabling	Provide (technical) expertise/advice					
		Legal and regulatory support					
		Online information portal					
		Assistance in permit procedures					
		Small set-up subsidies					
		Organise seminars					
		Organising network events					
		Small loans					
		Media attention for 'best practice' initiatives					
		Supportive local energy policies					
		Supportive spatial planning policies					
		Convincing citizens to join a CRE initiative					
		Provide an expert					
		Coordinate bulk buy purchase					
Enrichment literature							
Online consultation hour with the councillor							
1	Letting go	No interference/support from governmental actors					
		Establishment of an initiative without support of the local government					
		No interaction with the local government, choice of the initiative not to involve them					

What becomes explicit from this table is that many practices as described in the literature do not appear in the empirical data. A possible explanation could be that the governments studied in the case studies are still at the beginning of the process of supporting CRE initiatives. However, looking at the diversity of the practices can give a biased impression as it does not indicate the quality of the practices. Besides, some practices of the literature review (such as providing land for a wind farm) are not relevant for the type of CRE initiatives analysed in this research. Moreover, the boundaries between the different roles are not always evident (Mees et al., 2019). For example, the practice of hosting a working group that is currently classified in the stimulating role can also be considered as the creation of a network in the network steering role. Nevertheless, by comparing the practices from the literature with the empirical data, some conclusions can be drawn.

First, in the role letting go (**rung 1**), the literature reveals that CRE initiatives exist with no support or interference from the local or regional government (Boon & Dieperink, 2014; Frantzeskaki et al., 2013; Hasanov & Zuidema, 2018; Rydin & Turcu, 2019). In The Hague and Rotterdam, all the initiatives

received support from the municipality and/or the province. Hence, the role of letting go is not applicable for the municipalities and the province.

Second, the ‘basic’ facilitative practices (**rung 2**) such as providing advice and legal support, were also reflected in the case studies. Both municipalities and the province provide expertise and advice, legal and regulatory support, and have an online information portal. Based on the literature review and this research, the facilitative role is the most commonly used rung in supporting CRE initiatives (Blanchet, 2015; De Boer et al., 2018; Van der Schoor & Scholtens, 2015). This can be explained because this role requires limited capacity and resources of the local and regional governments. However, in the literature, some facilitative practices are found that do not appear in the empirical data. This implies that there is still room for improvement in the facilitative role. For example, the absence of supportive spatial planning and local energy policies (Hufen & Koppenjan, 2015; Proka et al., 2018) indicates that the facilitative role of Rotterdam and The Hague can be improved.

Third, in the stimulating role (**rung 3**), the most common way of direct support is in line with the literature review, through subsidies (i.e. Silva & Horlings, 2020; van der Waal et al., 2020; Wang et al., 2017). The Municipality of The Hague offers various practices that are also found in the literature review, such as organising a prize competition, capacity building, and granting legal permits. A possible explanation for the limited practices in the stimulating role of the Municipality of Rotterdam is that the municipality is still exploring how to offer support in a more structured way as most initiatives are in the initial or growing phase. The province's stimulating role is mainly focused on providing a subsidy. Although the Municipality of The Hague offers more diverse practices than the Municipality of Rotterdam, many practices found in the literature were not offered in practice. This implies that just as in the facilitating role, the stimulating role can be improved and extended with other practices.

Fourth, the empirical results show that mainly the regional government (province of South Holland) performs the network steering role (**rung 4**) with the creation of a learning network to enhance the knowledge exchange between initiatives. Moreover, in The Hague one initiative signed a ‘declaration to cooperate’ with the municipality. In this new form of cooperation between a CRE initiative and the municipality, decisions are co-decided. In the literature review, more practices were found in which the local and regional governments seek cooperation with CRE initiatives (Koirala et al., 2016; Mey et al., 2016). The difference between the literature and the empirical results can be explained because the municipalities in this study are still hesitant to see CRE initiatives as a partner or as a means to achieve policy goals.

Finally, in the regulating role (**rung 5**), the literature review shows that governments can regulate CRE initiatives by adapting spatial planning programs and conditions of construction fees (Warbroek & Hoppe, 2017). Based on the empirical results, both the government officials and the representatives of the initiatives emphasised that the independence of the initiatives must be preserved. If the local and regional government interfere too much in an initiative it is no longer a citizen initiative but an initiative led by the government. However, this research has shown that the role and value of CRE initiatives in the energy transition should be emphasised in the policies of the municipalities and the province.

8.1.1 Enrichment literature

In this explorative research, three practices were found that were not identified in the literature review as shown in Table 22. In the facilitative role, the Municipality of The Hague offered an **online**

consultation hour with the councillor. This is a useful practice to bring the world of the municipality closer to the world of the residents. In the stimulating role, the Municipality of Rotterdam supports initiatives and the intermediary organisation with **finding project funding**. Due to the lack of financial resources in the municipality, this is a smart way to support the initiatives. Moreover, in the network steering role, the **province functions as intermediary between the municipality and CRE initiatives**. As the province is further away from day-to-day practice, it can fulfil the role of intermediary when conflicts arise.

To conclude, a pattern can be observed in the different roles of the local and regional governments. In the empirical data, the roles are performed less extensively than found in the literature. This can partly be explained because different studies combined show more diverse practices, than the reality per case. However, it also indicates the great potential the municipalities and the province have to enhance the support to CRE initiatives. In line with the literature review, the facilitating and stimulating roles are the most common in the case studies. The literature shows that many practices are not (yet) implemented by the municipalities and the province. To what extent the analytical framework is a useful tool for analysing the roles of local and regional government is discussed in the next section.

8.2 Potential adjustments roles Analytical framework

The framework of Mees et al. (2019) has originally been used to explore the role of the local government in community initiatives for climate change adaptation in the Netherlands. Mees et al. (2019) encourage researchers to further develop the ladder of government participation to other public policy fields and institutional contexts. Hence, this framework is used to explore the role of the local and regional governments in supporting CRE initiatives. During the interviews with the experts and officials, respondents were asked to what extent the framework was suitable to analyse the different roles of the government. To enhance the framework for analysing citizen initiatives in the energy sector, two important preconditions are discussed, and one possible adjustment is proposed. Finally, an adjusted version of the framework is presented.

8.2.1 Preconditions

National government

As a result of cutbacks of the national government, Dutch municipalities and provinces have limited resources and capacity (Bakker et al., 2012). According to governmental officials, a necessary precondition for the use of 'the ladder of government participation' is that the local and regional government should always be seen within the operational possibilities of national frameworks. National decisions affect the possible roles local and regional governments can perform. For example, to stimulate initiatives with subsidies, sufficient financial resources of the national government are necessary.

Cooperation between people

The relationship between people is often crucial for the ability to work together as an initiative and the municipality or province. According to a governmental official, the dimension of 'people' should be a precondition for performing the different roles in the framework. If people that work together have trouble getting on well or if there is a frequent change of positions within the municipality or initiative, it is difficult to build a relationship. This research shows that the mutual misunderstanding between the residents and the municipality reduces the supportive role of the municipality. A sound

relationship between government officials and initiative representatives is a precondition for providing adequate support. The discussed preconditions are also relevant in analysing other types of citizen initiatives.

8.2.2 Adjustment framework

Partnership (co-creation)

The results indicate that the perceived ideal role of the local government by the initiative and intermediary representatives is working as an equal partner on the level of co-creation. The five roles in the framework of Mees et al. (2019), do not describe the development of a partnership between citizen initiatives and the local government. Working on a level of co-creation demands a more active relationship between the government and an initiative to together work on results (Edelenbos et al., 2018). Expert Schuurs (interview 2021) developed a framework that describes the roles of the municipality and the initiative which gradually grows towards a partnership (Figure 6). The first stage in this framework describes an open conversation between the municipality and the initiative representative to ‘coach’ each other. If the goals of the initiative are in line with the objectives of the municipality, the municipality can decide to facilitate the initiative by for example providing advice and legal support. When the relationship grows the municipality can decide to stimulate the initiative by providing funding in the form of loans or subsidies. Eventually, the relationship can develop into a kind of **partnership** where there is certain equality in the relationship with respect and recognition of each other's added value (Schuurs, 2021).

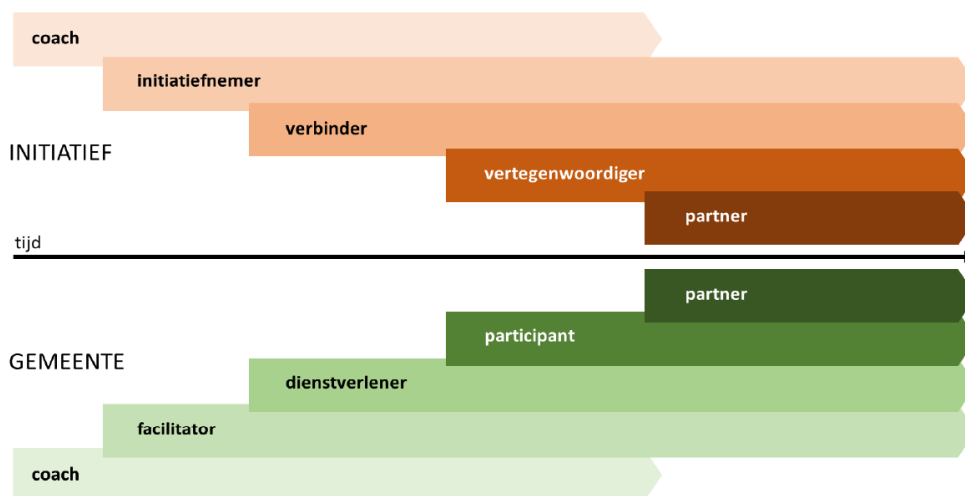


Figure 6. Towards a partnership of municipalities and initiatives (Schuurs, 2021)

This framework can be seen as an alternative to ‘the ladder of government participation’ of Mees et al. (2019), where not only the roles are described but the different roles ultimately lead to a partnership between an initiative and the local government. The shortcoming of the framework of Schuurs (2021) is that it does not cover all the different roles of the local government. For this reason, a new framework is proposed that combines the relevant roles of the local government of the framework of Schuurs (2021) and Mees et al. (2019).

The new framework is presented in Figure 7. In line with the ladder of government participation, the government can fulfil different roles in supporting the initiatives. The six roles are (1) letting go, (2)

facilitating, (3) stimulating, (4) network steering, and (5) Partnership/Co-creation. The regulating role (6) is constantly present as the initiatives work within the institutional context of the local government. The difference with the framework of Mees et al. (2019) is that the different roles develop over time and eventually lead to a partnership between the initiative and the local government. First, in the role of letting go the government does not support the initiative, but the initiative operates within the institutional context of the government. Second, the local government can facilitate the initiative by, for example, providing advice and legal support. Third, If the goals of the initiative match with the policy goals of the local government, the government can stimulate the initiative with for example subsidies or roofs to install collective solar projects. Fourth, in parallel with stimulating the initiative, the government can also fulfil the network steering role. In the network steering role, the local government initiates and creates a network of public and private stakeholders, with for example launching a network platform where different initiatives can exchange knowledge. Finally, the relationship between the initiative and local government can gradually grow into a partnership. In this partnership, the initiative stays independent but is recognized as an official party by the local government. In this study, there is one example where an initiative signed an official ‘declaration to cooperate’ with the local government. This example illustrates that this type of collaboration between the local government and an initiative is feasible.

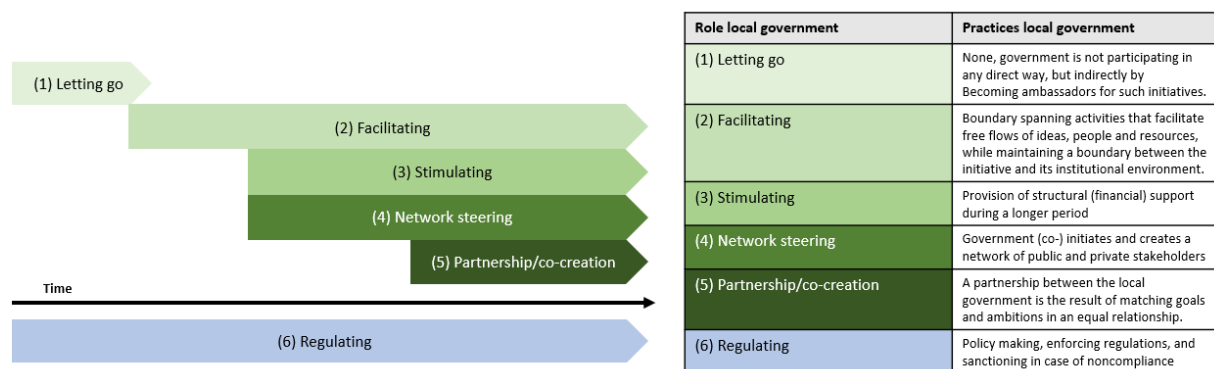


Figure 7: Roles of local government in supporting CRE initiatives adapted from Mees et al. (2019) and Schuurs (2021)

8.3 Type and phase

The literature reveals that community energy is a ‘pluralistic sector’ (p.25) with different types of organisations, technologies, goals, and business models (Seyfang et al., 2014). Expert Hoppe (Interview 2021) confirms this impression and states that there are more than 50 different definitions of local energy initiatives. The diversity of initiatives is also reflected in the empirical results of this study. To structure the empirical data, the initiatives were classified on their main type of activities: performing (1) collective solar projects and (2) heat projects. According to the literature, there is no single policy approach that favours all types of CRE initiatives (Maroni et al., 2019; Seyfang et al., 2013). The local and regional governments need to differentiate between different types of CRE initiatives for enhanced support (Hick & Ison, 2018). Hick and Ison (2018) do not specify in their research how the government should differentiate between different forms of CRE. Hence, it was expected in this research that there would be differences in support between the different types of initiatives. However, the empirical results show that there is only a slightly difference in governmental support to the different types of initiative. This can be explained by the lack of policies of the local and regional governments that distinguish between the different types of initiatives. However, it should be noted

that in this study the initiatives performed multiple activities, which made it difficult to attribute a certain type of support to a particular activity. Regarding the phase of an initiative, the initiatives were classified according to five phases (1) initial, (2) growing, (3) mature, (4) upscaling, and, (5) finishing phase. In the literature on citizen initiatives, Igalla et al. (2020) expected that the type and strength of governmental support are likely to be related to certain phases of an initiative. The empirical results confirm this expectation as they show that more advanced initiatives receive more support. This may be explained as initiatives in the mature and upscaling phase perform more and diverse activities, which also require more support from the government. This support is in general in the form of subsidies, roofs to install collective solar projects, and advice. Further research is needed to explore which types of support are the most effective for the performance of an initiative in certain phases.

8.4 Theoretical reflections

In various policy fields, citizen initiatives take over the tasks of the government in providing public services and goods (da Silva et al., 2018). As citizen initiatives active in the energy sector are the most common type of citizen initiatives in the sustainability sector (Igalla et al., 2019), this research contributes not only to more understanding of the role of local and regional governments in the energy transition but also in the transition towards a more sustainable and participative society. The existing scientific literature on citizen initiatives typically addresses a specific role of the government, such as the facilitative role (Bakker et al., 2012) or regulating role (Cuesta-López, 2012). This research project contributes to the literature by exploring the different roles the local and regional governments can perform in supporting CRE initiatives. The supportive roles of the local and regional governments in CRE initiatives are also relevant to citizen initiatives in other sustainability topics such as flood risk management (Seebauer et al., 2019) and waste management (Chin & Mees, 2021). However, compared to other types of citizen initiatives, some differences in the roles of the government stand out. First, in contrast to CRE initiatives, flood risk management initiatives are more flexible in their scope and duration of projects. Flood risk management initiatives are quickly established and disbanded when the mission is completed, which also requires a more flexible role of the government (Seebauer et al., 2019). In CRE initiatives the projects are in general active over a longer period and require structural (financial) support. Second, Chin and Mees (2021) researched the facilitative role of the governments of Brussels and Hong Kong in supporting citizen initiatives in waste management. The found practices and barriers are largely in line with this research. However, it is noteworthy that the government support per phase and type of the initiatives deviates from this research. In the study of Chin and Mees (2021) there is hardly any difference in the support in different innovation phases, although the practices do differ between the different types of waste management initiatives. This is contradictory with the results of this study where no differences were found in support per type initiatives but per phase. This difference may be explained because, in contrast to waste management initiatives (for example waste reduction projects), when CRE initiatives are becoming more advanced they perform more and diverse activities. Subsequently, this affects the level of support per phase of the initiatives. To conclude, the differences and similarities between different types of citizen initiatives can provide interesting insights to enhance the supportive role of governments. Moreover, it illustrates that the governments should differentiate in their policies between different types of citizen initiatives. This research has attempted to contribute to the empirical and theoretical understanding of the supportive role of governments towards citizen initiatives. If governments acquire a better understanding of their role towards citizen initiatives for different sustainability issues, the potential of the initiatives to contribute to a sustainable society will increase.

8.5 Limitations

This research contains a few limitations that should be noted. First, a disadvantage of case study research is the external validity of the results. The in-depth knowledge of the cases makes it difficult to generalise the results to other regions (Verschuren & Doorewaard, 2010). Especially, large-sized municipalities perform different roles in supporting CRE initiatives (Hoppe & Miedema, 2020). However, the found patterns in the case studies could be used as a conceptual generalisation to other regions in the Netherlands. This research revealed that several barriers and practices were found in both municipalities and the province. Further research on the roles and practices of Dutch municipalities and provinces in supporting CRE initiatives can test the validity of this research.

Second, the literature review on the practices of the local and regional government in supporting CRE initiatives has a bias to the English language. To provide a complete overview of the different types of support, more articles in different languages need to be analysed. Further research could explore in a literature review, the differences between the practices of governments in supporting CRE Initiatives in several countries.

Third, in conceptualising citizen initiatives the literature uses different lenses to describe similar phenomena such as social innovation, grassroots movement, bottom-up movement and, self-organisation. Further research can provide a systematic overview of the theoretical lenses and definitions to describe citizen initiatives. Moreover, the CRE initiative is often perceived as a 'vague' and 'elastic' concept (Hicks & Ison, 2018). Expert Hoppe (interview 2021) expressed that more than 50 different definitions exist to describe CRE initiatives. Further research can be conducted to provide an overview of the different definitions and types of CRE initiatives. If the definitions of initiatives are made more uniform, studies can be compared more effectively

Fourth, as the main focus of the research was on the role of the local and regional government, the role of the intermediary organisations remains underexposed. This research showed that intermediary organisations can perform various roles in supporting CRE initiatives and are a key player in improving the relationship between the local and regional government and CRE initiatives. Further research is needed to explore to what extent the role of intermediary organisations affects the degree and strength of governmental support to CRE initiatives.

Finally, the interviewed government officials were all linked to the sustainability departments of the municipality or province. As a result, only officials were interviewed who are in favour of sustainable policies. The barriers in this research indicate that the resistance in the municipality comes mainly from other departments such as the Department of Real Estate. Therefore, further research should include officials of various other departments. Moreover, expert Schuurs (interview 2021) expressed that every government official has his own opinion. This is also reflected in the results as officials from the same department had different opinions on the same topics. This limitation can be solved by taking a larger sample of government officials. Due to a lack of time including more officials was not feasible in this research. However, to better understand the political responsibility of the municipality an invitation was sent to interview the councillors of the Municipality of The Hague and Rotterdam. However, the councillors in both municipalities had no time to give an interview.

9. Conclusion

This research aimed to explore the roles of the local and regional governments in supporting CRE initiatives. The research attempted to answer the following research question: *How and to what extent do local and regional governments support CRE initiatives?* The selected case studies of this research were the Municipality of The Hague and the Municipality of Rotterdam. To include the overarching regional level, also the role of the Province of South Holland has been examined. All the CRE initiatives in both municipalities were included in this research to get a comprehensive overview of the roles of local and regional governments in different types and phases of the initiatives. A total of 28 interviews have been conducted, with CRE initiative representatives (14), intermediary organisation representatives (2), municipal officials (5), provincial officials (4), and experts (3). The main research question was split into five sub-questions. In the **first sub-question**, a literature review was carried out to identify which roles and practices local and regional governments can fulfil in supporting CRE initiatives. The results of the literature review were the input to the analytical framework of this research: ‘the ladder of government participation’.

The **second sub-question** explored the types of roles and practices the municipalities and the province fulfilled in supporting CRE initiatives, and to what extent these roles and practices were different for different types and phases of the initiatives. The results reveal that both municipalities and the province mainly perform a facilitating and stimulating role. In the facilitating role, the local and regional governments support initiatives by providing advice and expertise, legal and regulatory support and, running an online information portal. In the stimulating role, the most common way of support is subsidies and roofs to install collective solar projects. The municipalities offer start-up subsidies, which in some cases were supplemented by the subsidy of the province. Moreover, the network steering role is mainly performed by the province of South Holland with setting up a learning network. In this network, meetings are organised to exchange experiences and knowledge between the initiatives. The network steering role also suits the regional government as it can connect the initiatives from all over the province. The supportive practices of the municipalities and province do not differ substantially for initiatives focusing on (1) collective solar projects or (2) heat projects, since most of the practices apply to both types of initiatives. For example, technical feasibility studies can be conducted to study potential heat networks and to study the suitability of roofs to install solar panels. However, differences have been observed between the support of initiatives in different phases. Initiatives in the mature and upscaling phase received more frequent and more extensive support. This can be explained since more advanced initiatives tend to carry out more projects, which also requires more support from the government. The regulating role indicated that both municipalities and the province are still exploring to offer support in a more structured way. Currently, there is a lack of policies on how to support CRE initiatives. Finally, the stimulating role is perceived as the most important role as initiatives need subsidies and roofs to start projects.

The **third and fourth sub-question** identified the barriers CRE initiatives and intermediary organisations faced in the interaction with local and regional governments, and the barriers local and regional governments faced when performing their role in supporting CRE initiatives. According to the initiative and intermediary representatives, the supportive role of the municipalities is limited by the lack of internal alignment, lack of flexibility (bureaucracy), and lack of participation of initiatives in drafting neighbourhood plans. These barriers are not easy to solve for the municipality, as they are well-known problems and inherent to the size of the municipal organisation. Furthermore, the

municipalities are criticised for not having a clear vision of the energy transition and a lack of focus on achieving results. The feeling prevails that the municipalities rather focus on communication campaigns than achieving results in reducing CO₂ emissions. Moreover, according to interviewees, the government underestimates the professionalism and expertise of the initiatives. The professionalism of initiatives is also perceived as a barrier by officials because the role of volunteers and professionals is becoming increasingly blurred. To date, if an initiative is considered as a professional party then the same tendering rules apply as for companies. Initiatives that are in between a voluntary organisation and a market party do not yet fit in governmental policy. Subsequently, the barrier to keep money within the local economy was only mentioned in Rotterdam, and the barrier that the support to initiatives is not in line with the ambition of 'climate neutral in 2030' was only mentioned in The Hague. Finally, the officials perceive the mistrust between citizens and the municipality and the lack of capacity and resources as the main barriers. The mistrust between the municipality and the initiatives has to be reduced, which can be done by starting an open and ongoing dialogue.

The **fifth sub-question** explored the ideal roles of the local and regional governments in supporting CRE initiatives. The facilitation and stimulation of initiatives with practices such as supportive policies, subsidies, and roofs to install collective solar projects, are perceived to be ideal roles by both the government officials and the initiative and intermediary representatives. Although this research shows that these are the most common roles of the local and regional governments, there is criticism of the performance of these roles as reflected in the barriers. Besides, an important distinction should be made between the role of the government in different types of initiatives. On the one hand, the government should take a leading role in the heat transition, as it is a large-scale and complex task. In this leading role, the government should involve the initiatives in drafting neighbourhood plans. On the other hand, in supporting initiatives performing collective solar projects a more facilitative and stimulative role is preferred. Moreover, the initiative and intermediary representatives would like to be acknowledged as important agents in the energy transition. Therefore, the initiatives want to work with the municipality as equal partners on a level of co-creation. However, governmental officials still perceive the co-production and co-creation with CRE initiatives as a threat. As long as the CRE initiatives share the same goals as the local and regional governments on the energy transition, co-creation seems promising.

To conclude, the research confirms that local and regional governments play an important role in the initiation and continuation of CRE initiatives. However, the diversity of practices in the literature review indicates that there is great potential to enhance the supportive role of the governments. Moreover, the current roles are still far from ideal because of the identified barriers such as the lack of internal alignment, lack of participation, lack of vision on the energy transition, and lack of supportive policies for CRE initiatives. Especially, the absence of policies on how to deal with citizen initiatives in the regulating role limits the performance of the other roles. The policies on the energy transition should make explicit that CRE initiatives play a pivotal role in achieving the goals of the Climate Agreement. If the value of CRE initiatives is made clear in policy, it will help to exploit the potential of CRE initiatives to contribute to the energy transition. To enhance the supportive role of the local and regional government and to overcome the barriers, recommendations to the municipalities and the province are made in the following section.

9.1 Policy recommendations

The ultimate aim of this research was to provide recommendations to the Municipalities of The Hague, the Municipality of Rotterdam, and the Province of South Holland to enhance their supportive role towards CRE initiatives. Due to the diversity of the initiatives, there is no one-size-fits-all approach for the government in supporting CRE initiatives. However, the most important recommendations include:

1. Differentiate according to type and phase

For targeted support, the local and regional governments should differentiate the support according to the type and phase of initiatives. To do so, policies must be developed that connect the type of support with the main activities and the phase of an initiative. For example, this study shows that an initiative in the growing phase that aims to start a collective solar project needs a subsidy and a suitable roof. Subsequently, the initiative can independently recruit members to develop a financially viable business case. By contrast, Initiatives focusing on heat projects, working on a district or neighbourhood energy plan, want to be informed and involved in the decision-making process of the municipality as early as possible. For example, in drafting the transition vision heat (In Dutch: Transitievisie Warmte).

2. Improve internal alignment

The municipalities should work on better coordination and knowledge exchange between the different departments. The issues that CRE initiatives face are related to subjects that involve several departments. For example, in both municipalities, the Department of Real Estate is not well informed about the vision and state of affairs within the Department of Sustainability. The Department of Sustainability is often prepared to help and think along with the initiatives, but the Department of Real Estate is reluctant to support the initiatives with for example roofs. Moreover, initiatives should have one contact point in the municipality that ensures that questions from initiatives are passed on to other departments. In this way, the initiative representatives do not have to contact the various departments by themselves.

3. Optimise the relationship between citizens and the government

The municipalities and the province should work on an optimal relationship between the CRE initiatives representatives and the government officials. The municipality and the province are formed according to clear procedures and are politically responsible for the energy transition, whereas the citizens' initiatives are driven by activism and emotions with an unformed and non-hierarchical organisation form. To gain a better understanding of each other's worlds, officials and initiative representatives have to enter an open and ongoing dialogue with each other. For example, officials can invite initiative representatives to the municipality or province to explain and experience the political responsibility and associated decision-making processes of the government. This recommendation also applies the other way round: as a government, you should visit meetings of the initiatives. In this way, the authorities and members of initiatives can learn to know and appreciate each other's perspectives.

4. Utilise the knowledge of citizens

The municipality and province should utilise the knowledge and experience of the members of CRE initiatives when developing policy. As an initiative is not representative of the entire neighbourhood, the governments should use initiatives as a sounding board for making decisions in their neighbourhood. In this consultative role, the initiatives stay independent and can present their neighbourhood plans to the municipality and province. Moreover, the municipalities and the province should develop policies on how to deal with the concept of 'professional initiative'. This type of initiative has turnover but a public purpose. Hence, the initiative falls between a voluntary organisation and a market party. The members must receive financial compensation, but the initiative is not bound to the official procurement rules. This new type of initiative does not yet fit in governmental policy.

5. Towards a partnership

The long-term goal of the municipality should be to develop a partnership between the government and CRE initiatives. In this new form of cooperation between a CRE initiative and the municipality, decisions are co-decided. To develop a partnership, the municipality should acknowledge that they can accomplish more together with CRE initiatives than alone. The initiative stays independent but develops goals and ambitions together with the municipality. These ambitions can be formalised in a declaration. In The Hague already an example exists, where an initiative signed a 'declaration to cooperate' with the municipality. This example shows that this form of cooperation is feasible and increases the intrinsic motivation of the members of an initiative. As stated by an interviewee: *"The municipality and the initiatives have to come up with a joint strategy and not one that is defined by one of the parties"* (respondent R6).

Bibliography

- Arentsen, M., & Bellekom, S. (2014). Power to the people: Local energy initiatives as seedbeds of innovation? *Energy, Sustainability and Society*, 4(1), 1-12. <https://doi.org/10.1186/2192-0567-4-2>
- Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners*, 35(4), 216-224. <https://doi.org/10.1080/01944366908977225>
- Baker, L. (2006). Observation: A complex research method. *Library Trends*, 55(1), 171-189. <https://doi.org/10.1353/lib.2006.0045>.
- Bakker, J., Denters, B., Oude Vrielink, M., & Klok, P. J. (2012). Citizens' initiatives: How local governments fill their facilitative role. *Local Government Studies*, 38(4), 395-414. <https://doi.org/10.1080/03003930.2012.698240>
- Bauwens, T. (2016). Explaining the diversity of motivations behind community renewable energy. *Energy Policy*, 93, 278-290. <https://doi.org/10.1016/j.enpol.2016.03.017>
- Bauwens, T., & Devine-Wright, P. (2018). Positive energies? an empirical study of community energy participation and attitudes to renewable energy. *Energy Policy*, 118, 612-625. <https://doi.org/10.1016/j.enpol.2018.03.062>
- Bauwens, T., Gotchev, B., & Holstenkamp, L. (2016). What drives the development of community energy in europe? the case of wind power cooperatives. *Energy Research & Social Science*, 13, 136-147. <https://doi.org/10.1016/j.erss.2015.12.016>
- Becker, S., Kunze, C., & Vancea, M. (2017). Community energy and social entrepreneurship: Addressing purpose, organisation and embeddedness of renewable energy projects. *Journal of Cleaner Production*, 147, 25-36. <https://doi.org/10.1016/j.jclepro.2017.01.048>
- Beermann, J., & Tews, K. (2017). Decentralised laboratories in the german energy transition. why local renewable energy initiatives must reinvent themselves. *Journal of Cleaner Production*, 169, 125-134. <https://doi.org/10.1016/j.jclepro.2016.08.130>
- Bekkers, V., Edelenbos, J., Nederhand, J., Steijn, A. J., Tummers, L. G., & Voorberg, W. H. (2014). *The social innovation perspective in the public sector: Co-creation, self-organisation and meta-governance*. Retrieved from https://www.ris.uu.nl/ws/files/25375613/9781137472564_12_cha11.pdf
- Bertotti, M., Harden, A., Renton, A., & Sheridan, K. (2012). The contribution of a social enterprise to the building of social capital in a disadvantaged urban area of London. *Community Development Journal*, 47(2), 168-183. <https://doi.org/10.1093/cdj/bsr020>
- Bird, C., & Barnes, J. (2014). Scaling up community activism: The role of intermediaries in collective approaches to community energy. *People, Place & Policy Online*, 8(3) <https://doi.org/10.3351/ppp.0008.0003.0006>
- Blanchet, T. (2015). Struggle over energy transition in berlin: How do grassroots initiatives affect local energy policy-making? *Energy Policy*, 78, 246-254. <https://doi.org/10.1016/j.enpol.2014.11.001>

- Boon, F. P., & Dieperink, C. (2014). Local civil society based renewable energy organisations in the Netherlands: Exploring the factors that stimulate their emergence and development. *Energy Policy*, 69, 297-307. <https://doi.org/10.1016/j.enpol.2014.01.046>
- Boonstra, B., & Boelens, L. (2011). Self-organization in urban development: towards a new perspective on spatial planning. *Urban Research & Practice*, 4(2), 99-122. <https://doi.org/10.1080/17535069.2011.579767>
- Brisbois, M. C. (2020). Decentralised energy, decentralised accountability? lessons on how to govern decentralised electricity transitions from multi-level natural resource governance. *Global Transitions*, 2, 16-25. <https://doi.org/10.1016/j.glt.2020.01.001>
- Bulkeley, H. (2010). Cities and the governing of climate change. *Annual Review of Environment and Resources*, 35. <https://doi.org/10.1146/annurev-environ-072809-101747>
- Bulkeley, H., & Kern, K. (2006). Local government and the governing of climate change in Germany and the UK. *Urban Studies*, 43, 2237-2259. <https://doi.org/10.1080/00420980600936491>
- Bureau of European Policy Advisers (BEPA). (2010). *Empowering people, driving change. Social innovation in the European Union*. Retrieved from <https://ec.europa.eu/migrant-integration/librarydoc/empowering-people-driving-change-social-innovation-in-the-european-union>
- Burnham, P., Lutz, K. G., Grant, W., & Layton-Henry, Z. (2008). *Research methods in politics*. Macmillan International Higher Education. <https://doi.org/10.1007/978-0-230-36556-8>
- Chin, W. Y., & Mees, H. L. (2021). The rising stars of social innovations: How do local governments facilitate citizen initiatives to thrive? The case of waste management in Brussels and Hong Kong. *Environmental Policy and Governance*. <https://doi.org/10.1002/eet.1953>
- CityLab010. (2021). *Groen licht voor vrije Energie*. Retrieved from <https://citylab010.nl/>
- Cruz, R. B. (2018). The politics of land use for distributed renewable energy generation. *Urban Affairs Review*, 54(3), 524-559. <https://doi.org/10.1177/1078087416672589>
- Cuesta-López, V. (2012). A comparative approach to the regulation on the European Citizens' initiative. *Perspectives on European Politics and Society*, 13(3), 257-269. <https://doi.org/10.1080/15705854.2012.702571>
- da Silva, D., Horlings, L. G., & Figueiredo, E. (2018). Citizen initiatives in the post-welfare state. *Social Sciences*, 7(12), 252. <https://doi.org/10.3390/socsci7120252>
- da Silva, D. S., & Horlings, L. G. (2020). The role of local energy initiatives in co-producing sustainable places. *Sustainability Science*, 15(2), 363-377. <https://doi.org/10.1007/s11625-019-00762-0>
- De Boer, J., Zuidema, C., & Gugerell, K. (2018). New interaction paths in the energy landscape: The role of local energy initiatives. *Landscape Research*, 43(4), 489-502. <https://doi.org/10.1080/01426397.2018.1444154>
- Devine-Wright, P. (2005). Beyond NIMBYism: Towards an integrated framework for understanding public perceptions of wind energy. *Wind Energy: An International Journal for Progress and Applications in Wind Power Conversion Technology*, 8(2), 125-139. <https://doi.org/10.1002/e.124>

- Dóci, G., & Vasileiadou, E. (2015). "Let's do it ourselves" individual motivations for investing in renewables at community level. *Renewable and Sustainable Energy Reviews*, 49, 41-50. <https://doi.org/10.1016/j.rser.2015.04.051>
- Driessen, P. P., Dieperink, C., Van Laerhoven, F., Runhaar, H. A., & Vermeulen, W. J. (2012). Towards a conceptual framework for the study of shifts in modes of environmental governance—experiences from the Netherlands. *Environmental policy and governance*, 22(3), 143-160. <https://doi.org/10.1002/eet.1580>
- Duurzaam Den Haag. (2018). *Duurzaam Den Haag Manifest 2018 – 2028*. Retrieved from <https://duurzaamdenhaag.nl/over-ons>
- Duurzame Stad Den Haag. (2021). *Samen opweg naar een duurzame stad met schone energie*. Retrieved from <https://duurzamestad.denhaag.nl/>
- Edelenbos, J., Van Buuren, A., Roth, D., & Winnubst, M. (2017). Stakeholder initiatives in flood risk management: Exploring the role and impact of bottom-up initiatives in three 'Room for the river' projects in the Netherlands. *Journal of Environmental Planning and Management*, 60(1), 47-66. <https://doi.org/10.1080/09640568.2016.1140025>
- Edelenbos, J., van Meerkerk, I., & Schenk, T. (2018). The evolution of community self-organization in interaction with government institutions: Cross-case insights from three countries. *The American Review of Public Administration*, 48(1), 52-66. <https://doi.org/10.1177/0275074016651142>
- Energie Samen Zuid-Holland. (2021). *Ontwikkelfonds voor energiecoöperaties*. Retrieved from <https://www.energiesamenzuidholland.nl/ontwikkelfonds/>
- Energieswitch010. (2021). *Nieuwe klimaatdeals gepresenteerd in BlueCity*. Retrieved from <https://energieswitch010.nl/klimaatdeals/bijeenkomst-8-oktober>
- Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry*, 12(2), 219-245. <https://doi.org/10.1177/1077800405284363>
- Frantzeskaki, N., Avelino, F., & Loorbach, D. (2013). Outliers or frontrunners? exploring the (self-) governance of community-owned sustainable energy in scotland and the netherlands. *Renewable energy governance* (pp. 101-116) Springer. https://doi.org/10.1007/978-1-4471-5595-9_6
- Gemeente Den Haag. (2018). *Programmaplan Energietransitie Den Haag*. Retrieved from https://denhaag.raadsinformatie.nl/document/6177290/1/RIS299076_Bijlage_2_Basisversie_programmaplanf
- Gemeente Den Haag. (2019). *Nota Duurzaamheid Schone energie in een groene stad*. Retrieved from <https://www.denhaag.nl/nl/in-de-stad/natuur-en-milieu/duurzaamheid/haags-plan-voor-een-duurzame-toekomst.htm>
- Gemeente Den Haag. (2021). *Programmabrief Duurzaamheid 2021*. Retrieved from https://denhaag.raadsinformatie.nl/document/9148643/1/RIS306148_Bijlage
- Gemeente Rotterdam. (2019). *Uitvoeringsplan Energietransitie 2019-2020*. Retrieved from <https://www.watdoetdegemeente.rotterdam.nl/begroting2020/paragrafen/energietransitie/>

- Gemeente Rotterdam. (2020a). *Rotterdams Duurzaamheids-kompas*. Retrieved from <https://duurzaam010.nl/nieuws/rotterdams-duurzaamheidskompas-vernieuwd/>
- Gemeente Rotterdam. (2020b). *Uitvoeringsplan Energietransitie 2020-2022*. Retrieved from <https://rotterdam.raadsinformatie.nl/document/9004866/1>
- Gemeentenatlas. (2021). *Actuele kaarten van alle continentale Nederlandse gemeenten*. Retrieved from Gemeentenatlas.nl
- George, A. L., & Bennett, A. (2005). *Case studies and theory development in the social sciences* mit Press. <https://doi.org/10.1017/s0022381607080231>
- Goldthau, A. (2014). Rethinking the governance of energy infrastructure: Scale, decentralization and polycentrism. *Energy Research & Social Science, 1*, 134-140. <https://doi.org/10.1016/j.erss.2014.02.009>
- Hasanov, M., & Zuidema, C. (2018). The transformative power of self-organisation: Towards a conceptual framework for understanding local energy initiatives in the Netherlands. *Energy Research & Social Science, 37*, 85-93. <https://doi.org/10.1016/j.erss.2017.09.038>
- Healey, P. (2015). Citizen-generated local development initiative: Recent English experience. *International Journal of Urban Sciences, 19*(2), 109-118. <https://doi.org/10.1080/12265934.2014.989892>
- Hegger, D. L., Mees, H. L., Driessen, P. P., & Runhaar, H. A. (2017). The roles of residents in climate adaptation: A systematic review in the case of the Netherlands. *Environmental Policy and Governance, 27*(4), 336-350. <https://doi.org/10.1002/eet.1766>
- Hewitt, R. J., Bradley, N., Baggio Compagnucci, A., Barlagne, C., Ceglaz, A., Cremades, R., . . . Slee, B. (2019). Social innovation in community energy in europe: A review of the evidence. *Frontiers in Energy Research, 7*, 31. <https://doi.org/10.31235/osf.io/hswzg>
- Hicks, J., & Ison, N. (2018). An exploration of the boundaries of 'community' in community renewable energy projects: Navigating between motivations and context. *Energy Policy, 113*, 523-534. <https://doi.org/10.1016/j.enpol.2017.10.031>
- HIER Opgewekt (2021). *De initiatieven op een rij*. Retrieved from <https://www.hieropgewekt.nl/initiatieven>
- HIER Opgewekt. (2020). *De lokale energie monitor 2020*. Retrieved from hieropgewekt.nl/uploads/inline/Lokale%20EnergieMonitor%202020_def_lr_28-01.pdf
- Hilal, A. H., & Alabri, S. S. (2013). Using NVivo for data analysis in qualitative research. *International Interdisciplinary Journal of Education, 2*(2), 181-186. <https://doi.org/10.12816/0002914>
- Hill, C. J., & Lynn, L. E. (2004). Is hierarchical governance in decline? Evidence from empirical research. *Journal of public administration research and theory, 15*(2), 173-195. <https://doi.org/10.1093/jopart/mui011>
- Hoppe, T., & De Vries, G. (2019). Social innovation and the energy transition. *Sustainability, 11*(1), 141. <https://doi.org/10.3390/su11010141>

- Hoppe, T., & Miedema, M. (2020). A governance approach to regional energy transition: Meaning, conceptualization and practice. *Sustainability*, *12*(3), 915. <https://doi.org/10.3390/su12030915>
- Hufen, J., & Koppenjan, J. (2015). Local renewable energy cooperatives: Revolution in disguise? *Energy, Sustainability and Society*, *5*(1), 1-14. <https://doi.org/10.1186/s13705-015-0046-8>
- Igalla, M., Edelenbos, J., & van Meerkerk, I. (2019). Citizens in action, what do they accomplish? A systematic literature review of citizen initiatives, their main characteristics, outcomes, and factors. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organisations*, *30*(5), 1176-1194. <https://doi.org/10.1007/s11266-019-00129-0>
- Igalla, M., Edelenbos, J., & van Meerkerk, I. (2020). What explains the performance of community-based initiatives? testing the impact of leadership, social capital, organisational capacity, and government support. *Public Management Review*, *22*(4), 602-632. <https://doi.org/10.1080/14719037.2019.1604796>
- Kisby, B. (2010). The big society: Power to the people? *The Political Quarterly*, *81*(4), 484-491. <https://doi.org/10.1111/j.1467-923x.2010.02133.x>
- Klievink, B., & Janssen, M. (2014). Developing multi-layer information infrastructures: Advancing social innovation through public-private governance. *Information Systems Management*, *31*(3), 240-249. <https://doi.org/10.1080/10580530.2014.923268>
- Klimaatakkoord. (2019). *Klimaatakkoord*. Den Haag. Retrieved from <https://www.klimaatakkoord.nl/documenten/publicaties/2019/06/28/klimaatakkoord>
- Koirala, B. P., Koliou, E., Friege, J., Hakvoort, R. A., & Herder, P. M. (2016). Energetic communities for community energy: A review of key issues and trends shaping integrated community energy systems. *Renewable and Sustainable Energy Reviews*, *56*, 722-744. <https://doi.org/10.1016/j.rser.2015.11.080>
- Li, L. W., Birmele, J., Schaich, H., & Konold, W. (2013). Transitioning to community-owned renewable energy: Lessons from Germany. *Procedia Environmental Sciences*, *17*, 719-728. <https://doi.org/10.1016/j.proenv.2013.02.089>
- Lo, C. (2018). Between government and governance: Opening the black box of the transformation thesis. *International Journal of Public Administration*, *41*(8), 650-656. https://doi.org/10.1007/978-3-319-31816-5_3282-1
- Markantoni, M. (2016). Low carbon governance: Mobilizing community energy through top-down support? *Environmental Policy and Governance*, *26*(3), 155-169. <https://doi.org/10.1002/eet.1722>
- Mees, H. L., Uittenbroek, C. J., Hegger, D. L., & Driessen, P. P. (2019). From citizen participation to government participation: An exploration of the roles of local governments in community initiatives for climate change adaptation in the Netherlands. *Environmental Policy and Governance*, *29*(3), 198-208. <https://doi.org/10.1002/eet.1847>
- Meijerink, S., & Stiller, S. (2013). What kind of leadership do we need for climate adaptation? A framework for analyzing leadership objectives, functions, and tasks in climate change

adaptation. *Environment and Planning C: Government and Policy*, 31(2), 240-256.

<https://doi.org/10.1068/c11129>

Mey, F., Diesendorf, M., & MacGill, I. (2016). Can local government play a greater role for community renewable energy? A case study from Australia. *Energy Research & Social Science*, 21, 33-43.

<https://doi.org/10.1016/j.erss.2016.06.019>

Ministerie van Economische Zaken. (2016). *Energierapport Transitie naar Duurzaam*. Retrieved from <https://www.rijksoverheid.nl/documenten/rapporten/2016/01/18/energierapport-transitie-naar-duurzaam>

Moroni, S., Alberti, V., Antoniucci, V., & Bisello, A. (2019). Energy communities in the transition to a low-carbon future: A taxonomical approach and some policy dilemmas. *Journal of Environmental Management*, 236, 45-53. <https://doi.org/10.1016/j.jenvman.2019.01.095>

Movisie. (2017). *Participatiesamenleving anno 2017: Volop kansen. Hoe staat het ervoor met de participatiesamenleving?* Retrieved from <https://www.movisie.nl/artikel/participatiesamenleving-anno-2017-volop-kansen>

Nederhand, J., Bekkers, V., & Voorberg, W. (2016). Self-organisation and the role of government: How and why does self-organisation evolve in the shadow of hierarchy? *Public Management Review*, 18(7), 1063-1084. <https://doi.org/10.1080/14719037.2015.1066417>

Oteman, M., Kooij, H., & Wiering, M. A. (2017). Pioneering renewable energy in an economic energy policy system: The history and development of Dutch grassroots initiatives. *Sustainability*, 9(4), 550. <https://doi.org/10.3390/su9040550>

Pel, B., & Bauler, T. (2014). The institutionalization of social innovation: between transformation and capture. *Transit working paper*, 2, 2-1. <https://doi.org/10.4324/9781315630168-7>

Pickvance, C. G. (2001). Four varieties of comparative analysis. *Journal of Housing and the Built Environment*, 16(1), 7-28. <https://doi.org/10.1023/a:1011533211521>

Pinker, A., Argüelles, L., Fischer, A., & Becker, S. (2020). Between straitjacket and possibility: Energy initiatives and the politics of regulation. *Geoforum*, 113, 14-25.

<https://doi.org/10.1016/j.geoforum.2020.04.016>

Pitt, D., & Congreve, A. (2017). Collaborative approaches to local climate change and clean energy initiatives in the USA and England. *Local Environment*, 22(9), 1124-1141.

<https://doi.org/10.1080/13549839.2015.1120277>

Proka, A., Hisschemöller, M., & Loorbach, D. (2018). Transition without conflict? Renewable energy initiatives in the Dutch energy transition. *Sustainability*, 10(6), 1721.

<https://doi.org/10.3390/su10061721>

Provincie Zuid-Holland. (2021). *Regionale Energiestrategie (RES)*. Retrieved from <https://www.zuid-holland.nl/onderwerpen/energie/energie-regio/>

Raad voor het openbaar bestuur (ROB). (2012). *Loslaten in vertrouwen*. Naar een nieuwe verhouding tussen overheid, markt én samenleving. Retrieved from

<https://www.raadopenbaarbestuur.nl/documenten/publicaties/2012/11/22/loslaten-in-vertrouwen>

- Rogers, J. C., Simmons, E. A., Convery, I., & Weatherall, A. (2008). Public perceptions of opportunities for community-based renewable energy projects. *Energy Policy*, *36*(11), 4217-4226. <https://doi.org/10.1016/j.enpol.2008.07.028>
- Rotmans, J. (2012). In the eye of the hurricane. The Netherlands in transition; In het oog van de orkaan. *Nederland in transitie*. Retrieved from <https://www.osti.gov/etdeweb/biblio/22001964>
- Ruggiero, S., Onkila, T., & Kuitinen, V. (2014). Realizing the social acceptance of community renewable energy: A process-outcome analysis of stakeholder influence. *Energy Research & Social Science*, *4*, 53-63. <https://doi.org/10.1016/j.erss.2014.09.001>
- Rydin, Y., & Turcu, C. (2019). Revisiting urban energy initiatives in the UK: Declining local capacity in a shifting policy context. *Energy Policy*, *129*, 653-660. <https://doi.org/10.1016/j.enpol.2019.02.054>
- Sørensen, E. (2002). Democratic theory and network governance. *Administrative Theory & Praxis*, *24*(4), 693-720. <https://doi.org/10.1080/10841806.2002.11029383>
- Schuurs, R. (2021). Towards partnership of municipalities and initiatives. Retrieved from: <https://www.energiecollectiefcapelle.nl/wordpress/wp-content/uploads/2021/04/2021-03-10-Reflectie-op-Tussenruimte.pdf>
- Seawright, J., & Gerring, J. (2008). Case selection techniques in case study research: A menu of qualitative and quantitative options. *Political Research Quarterly*, *61*(2), 294-308. <https://doi.org/10.1177/1065912907313077>
- Seebauer, S., Ortner, S., Babicky, P., & Thaler, T. (2019). Bottom-up citizen initiatives as emergent actors in flood risk management: Mapping roles, relations and limitations. *Journal of flood risk management*, *12*(3), e12468. <https://doi.org/10.1111/jfr3.12468>
- Seyfang, G., Hielscher, S., Hargreaves, T., Martiskainen, M., & Smith, A. (2014). A grassroots sustainable energy niche? reflections on community energy in the UK. *Environmental Innovation and Societal Transitions*, *13*, 21-44. <https://doi.org/10.1016/j.eist.2014.04.004>
- Seyfang, G., Park, J. J., & Smith, A. (2013). A thousand flowers blooming? an examination of community energy in the UK. *Energy Policy*, *61*, 977-989. <https://doi.org/10.1016/j.enpol.2013.06.030>
- Sloot, D., Jans, L., & Steg, L. (2019). In it for the money, the environment, or the community? motives for being involved in community energy initiatives. *Global Environmental Change*, *57*, 101936. <https://doi.org/10.1016/j.gloenvcha.2019.101936>
- Soeiro, S., & Dias, M. F. (2020). Renewable energy community and the European energy market: main motivations. *Heliyon*, *6*(7), e04511. <https://doi.org/10.1016/j.heliyon.2020.e04511>
- Stewart, J. (2012). Multiple-case study methods in governance-related research. *Public Management Review*, *14*(1), 67-82. <https://doi.org/10.1080/14719037.2011.589618>
- Szulecki, K. (2018). Conceptualizing energy democracy. *Environmental Politics*, *27*(1), 21-41. <https://doi.org/10.1080/09644016.2017.1387294>
- United Nations (UN). (2015). *The Paris agreement*. Retrieved from https://unfccc.int/sites/default/files/english_paris_agreement.pdf

- Van Der Schoor, T., & Scholtens, B. (2015). Power to the people: Local community initiatives and the transition to sustainable energy. *Renewable and Sustainable Energy Reviews*, 43, 666-675. <https://doi.org/10.1016/j.rser.2014.10.089>
- Van Der Waal, Esther C, Das, A. M., & van der Schoor, T. (2020). Participatory experimentation with energy law: Digging in a 'regulatory sandbox' for local energy initiatives in the netherlands. *Energies*, 13(2), 458. <https://doi.org/10.3390/en13020458>
- Verhoeven, I., & Tonkens, E. (2013). Talking active citizenship: Framing welfare state reform in England and the Netherlands. *Social Policy and Society*, 12(3), 415-426. <https://doi.org/10.1017/S1474746413000158>
- Verschuren, P., & Doorewaard, H. (2010). Designing a Research Project. (M. J. Mellion, Ed.), Eleven International publishing (Second). The Hague: Eleven International Publishing.
- Voorberg, W., Bekkers, V., & Tummers, L. (2013). Embarking on the social innovation journey: A systematic review regarding the potential of co-creation with citizens. <https://doi.org/10.1080/14719037.2014.930505>
- Walker, G., & Devine-Wright, P. (2008). Community renewable energy: What should it mean? *Energy Policy*, 36(2), 497-500. <https://doi.org/10.1016/j.enpol.2007.10.019>
- Wang, X., Liu, C., & Hawkins, C. V. (2017). Local government strategies for financing energy efficiency initiatives. *The American Review of Public Administration*, 47(6), 672-686. <https://doi.org/10.1177/0275074015619483>
- Warbroek, B., & Hoppe, T. (2017). Modes of governing and policy of local and regional governments supporting local low-carbon energy initiatives; exploring the cases of the dutch regions of overijssel and fryslân. *Sustainability*, 9(1), 75. <https://doi.org/10.3390/su9010075>
- Warbroek, B., Hoppe, T., Coenen, F., & Bressers, H. (2018). The role of intermediaries in supporting local low-carbon energy initiatives. *Sustainability*, 10(7), 2450. <https://doi.org/10.3390/su10072450>
- Wierling, A., Schwanitz, V. J., Zeiß, J. P., Bout, C., Candelise, C., Gilcrease, W., & Gregg, J. S. (2018). Statistical evidence on the role of energy cooperatives for the energy transition in european countries. *Sustainability*, 10(9), 3339. <https://doi.org/10.3390/su10093339>
- Yin, R. K. (2009). Case study research: Design and methods (4th Ed.). Thousand Oaks, CA: Sage. <https://doi.org/10.3138/cjpe.30.1.108>

Appendix A: Overview respondents initiatives and intermediary organisations

Name initiative	Neighbourhood	Date interview
The Hague		
Buurtenergie Statenkwartier	wijk Statenkwartier	9 April 2021
Haagse Stroom	Stationsbuurt and Bomenbuurt	12 April 2021
De Groene Regentes	wijk regentes	13 April 2021
Duursaam Benoordenhout	Benoordenhout	13 April 2021
Duurzaam Den Haag	Intermediary organisation	14 April 2021
Kopgroep2030	Koningsplein en Regentesseplein en omgeving	14 April 2021
Langebeesten Energiek	wijk Langebeesten	14 April 2021
Sterk op Stroom	Vruchtenbuurt	15 April 2021
Vogelwijk Energie(k)	wijk Vogelwijk	20 April 2021
Hernieuwbare Warmte Ypenburg	Ypenburg	11 May 2021
Rotterdam		
Energie van Rotterdam	Intermediary organisation	7 April 2021
Energie Coöperatie Rozenburg	Rozenburg	13 April 2021
Blijstroom	Blijdorp	14 April 2021
Alex Energie	Rotterdam Prins Alexander	19 April 2021
Wijkbedrijf de Middellander	Middelland	19 April 2021
Delfshaven Energie Coöperatie	Delfshaven	22 April 2021

Appendix B: Overview respondents government officials and experts

Name	Function	Date interview
Province of South Holland		
	Policy Officer Local Energy Initiatives	28 April
	Policy Officer Local Heat Initiatives	29 April
	Project Manager Energy and Heat	3 May
	Project Manager Local Energy Initiatives	6 May
Municipality of The Hague		
	Project Manager Sustainability	29 April
	Manager Energy Transition	6 May
	Director Energy Transition	1 June
Municipality of Rotterdam		
	Policy officer Department Sustainability	29 April
	Programme Manager Solar Energy	30 April
Experts		
Thomas Hoppe	Associate Professor TU Delft	25 Mei
Ruud Schuurs	Process support RES	3 June
Anne Marieke Schwenke	Independent researcher Hier Opgewekt	4 June

Appendix C: Mail respondents

Mail CRE initiatives (Dutch)

Beste,

Is het mogelijk om u binnenkort online te interviewen over de rol van de lokale overheid in het ondersteunen van XX-initiatief?

Mijn naam is Ries Verhoeven, momenteel werk ik aan mijn master scriptie van de studie Sustainable Development (Universiteit Utrecht), en ik richt mijn onderzoek op de rol van lokale overheden bij het ondersteunen van lokale energie initiatieven.

Komende weken interview ik beleidsmedewerkers van de, Gemeente Rotterdam, Gemeente Den Haag en verschillende lokale energie initiatieven. In gesprek met XXX van de XXX kwam uw naam meteen naar voren en zo ben ik aan uw email adres gekomen.

Ik zou u graag interviewen om een beeld te krijgen hoe de lokale overheid XX-initiatief ondersteund en hoe de rol van de overheid kan worden verbeterd .

Het interview kan online in Teams of Zoom worden gehouden en zal ongeveer 40 minuten in beslag nemen. Zou u het leuk vinden en tijd hebben voor een kort interview op XXX? Als een andere datum beter uitkomt is dat uiteraard ook geen probleem.

Alvast bedankt voor uw reactie,

Met vriendelijke groet,

Ries Verhoeven

Mail Governmental officials (Dutch)

Beste XXX,

In een gesprek met XXX van de Provincie Zuid-Holland kwam uw naam naar voren voor een interview en zo ben ik aan uw email adres gekomen. Is het mogelijk om u binnenkort online te interviewen over de rol van uw gemeente in het ondersteunen van lokale energie initiatieven

Mijn naam is Ries Verhoeven, momenteel werk ik aan mijn masterscriptie van de studie Sustainable Development (Universiteit Utrecht), en ik richt mijn onderzoek op de rol van lokale overheden bij het ondersteunen van lokale energie initiatieven. Afgelopen weken heb ik bijna alle lokale energie initiatieven in de gemeente Rotterdam en Den Haag geïnterviewd. Uit de gesprekken kwamen interessante resultaten naar voren die ik graag met u zou willen bespreken.

Het interview kan online in Teams of Zoom worden gehouden en zal ongeveer 40 minuten in beslag nemen. Zou u het leuk vinden én tijd hebben voor een kort interview op een van de onderstaande data? Als een andere datum beter uitkomt is dat uiteraard ook geen probleem.

Alvast bedankt voor uw reactie,

Met vriendelijke groet,

Ries Verhoeven

Appendix D: Interview guide initiatives

Interview guide: initiatives

Introduction research

Informed consent recording interview

Introduction

1. Could you briefly describe your role within the initiative?
2. What have you achieved so far with the initiative?
3. What is the ambition of your initiative?
4. In which phase would you classify your initiative?
 - initial phase (researching, preparing, experimenting),
 - growing phase (mobilizing supporters, recognition by established parties),
 - mature phase (fully operational),
 - upscaling phase (exploring additional, new services)
 - finishing phase (initiative is drawing to a close, completion)
5. How many members has your initiative?

Role of the local/regional government

6. In what ways and when did your initiative receive support from the municipality?
7. In what ways and when did your initiative receive support from the province?
8. In what ways and when did your initiative receive support from other parties?
9. In what ways should the local government support your initiative now?
10. What are the barriers to the role of local government in supporting your initiatives?
11. To what extent is according to you the role of the local and regional government changing in relation to community energy initiatives?

Ideal role of the local government

12. What is according to you the ideal role of the local government in supporting your initiative? (to what extent should the local government take more control or leave room for the initiatives)

Thanks for your time!

Appendix E: Interview guide government official

Interview guide: government officials

Introduction research

Informed consent recording interview

Introduction

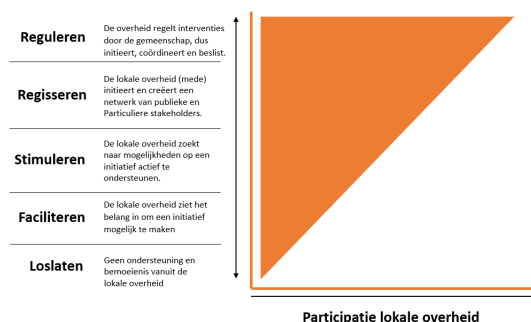
1. What is your function in the province/municipality?

Questions

2. What kind of support do you offer to community renewable energy initiatives? (and why this type of support?)
3. Do you differentiate the support on type and/or phase to different initiatives?
4. How do you perceive the role of the intermediary organisations (Energie van Rotterdam/ Duurzaam Den Haag) in the relationship between the initiatives and the province/municipality?
5. What are the barriers you face in supporting the initiatives? (To what extent does this differ per type/phase of the initiative?)
6. To what extent is the role of the municipality/province is changing in relation to community energy initiatives?
7. The following 4 barriers are the most frequently mentioned in the interviews with the initiatives. To what extent are you aware of these barriers? Are there solutions for these barriers? (I will mention the obstacles and briefly respond to them)
 - Lack of participation
 - Lack of vision and integrated view on sustainability
 - Underestimating the expertise and knowledge of
 - Investing in your own population instead of letting profits go to big companies
 - Lack of flexibility (system world of the municipality)
 - Internal alignment within the municipality
 - Keep the money within the local economy

Ideal role local/regional government

8. If you take a look at the 'Ladder of government participation', what is in your opinion the ideal role of the local/regional government? (Why this role?)
9. When you look at the 'government participation ladder', are there any roles that are missing, and if so, which ones and why?



Appendix F: Coding scheme NVIVO

1. Different actors

- The Hague CRE initiatives + intermediary organisation
- Municipality of The Hague
- Rotterdam CRE initiatives + intermediary organisation
- Municipality of Rotterdam
- Province of South Holland
- Experts

2. Per actor the following nodes.

- Type of practices
 - Letting go
 - Facilitation
 - Stimulation
 - Network Steering
 - Regulating
- Barriers
 - Each barrier a different node (inductive)
- Response barriers initiatives (only for governmental officials)
 - Each response different node
- Role Intermediary organisations
 - Each intermediary organisation one node
- Ideal role local/regional government
 - Government officials: nodes according roles analytical framework (deductive)
 - Initiatives: each role different node (inductive)