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Understanding energy injustices experienced by stakeholders in the Rotterdam- The Hague energy region
Examining the decision-making process on a local and regional level and its impact on a just energy transition

Master Thesis
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Understanding energy injustices experienced by stakeholders within the Rotterdam- The Hague energy region

Examining the decision-making process on a local and regional level and its impact on a just energy transition

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Abstract

Climate change has a devastating impact on the earth and its inhabitants, events like rising sea levels, warmer climates, increased amount of natural disasters and health issues are rising. This is due to the greenhouse gas effect, which is warming the planet. Greenhouse gases like CO₂ and methane are causing the planet to heat and the climate to change. Climate justice is a theoretical concept that recognises the unequal distribution of burdens due to climate change and the benefits of pollution over the last decades, climate justice has emerged as a framework to address these issues. In line with the global commitment to combat climate change as signed in the Paris Agreement, the European Union and the Dutch national government have pledged to become climate neutral by 2050, aiming to balance the amount of greenhouse gases emitted with equivalent reductions, effectively minimizing their overall impact on the environment.

The energy industry is still today one of the highest polluting sectors, this is also the case in the Netherlands, this shows the importance of transitioning the current fossil-fueled energy generation to a more sustainable form of energy generation, such as wind and solar energy. Energy is becoming more and more incorporated into our daily lives and has become a human right. Another academic theoretical framework has emerged in the last few years in energy research, which is energy justice. Energy justice is described as a global energy system that fairly distributes the costs and benefits of energy service and one that has representative and impartial energy decision-making. The energy justice framework consists of 5 tenets, distributional justice, procedural justice, justice as recognition, redistributive justice and cosmopolitan justice. Additionally, there are 10 principles related to this framework. This framework can be used to assess current governance on how just they govern the energy transition.

Within the Netherlands, the energy transition is being governed at regional and local levels. The national governments have established a collaboration of municipalities, provinces, waterboards and private companies called the Regional Energy Strategies (RES), which is working on the energy transition. Local governments have ultimately the responsibility to carry out the plans for the energy transition but have to interact with other governments on all levels to do so properly.

However, there is a limited understanding of how the energy transition is governed on local and regional levels. Furthermore, there are calls to incorporate the energy justice framework in the decision-making process. This master thesis has jumped into this knowledge gap focusing on the regional and local governments within the RES Rotterdam- The Hague. This region characterizes itself as a large and diverse region and is, mostly in suburban areas, dealing with energy poverty. This research is utilizing a mixed-method approach to accomplish its goals. 15 interviews with stakeholders were held to gain an understanding of the decision-making process, and current policies and to investigate the level of attention to the decision-making process. Furthermore, 4 interviews with citizen representatives to investigate the challenges and needs of citizens in the energy transition. To understand these challenges and needs even more, a media analysis is done, analysing 36 different newspaper articles in this region.

The research objectives were as follows: understanding the local and regional energy decision-making process, identifying challenges and barriers to incorporating energy justice and mitigating energy poverty, and examining the engagement of regional and local bodies with stakeholders and citizens. Lastly, also understand the perceptions, experiences and needs of citizens in the energy transition.

The mixed-research approach provided valuable insights into the challenges of the energy transition in relation to energy justice. The media analysis revealed concerns about energy poverty, the widening wealth gap, and the importance of citizen participation. The interviews with citizen representatives confirmed these findings and highlighted the need for tailored approaches and mitigation strategies to achieve a just transition. Out of the interviews with stakeholders, it became clear that regional and local governments have implemented measures to enhance energy justice, without knowledge of the energy justice framework. The interviews also emphasized the distinction between participating in the energy transition and participating in the decision-making process, with a focus on the former. Concerns about energy poverty, the widening wealth gap, and potential policy measures to address energy justice were discussed. The findings highlight the significance of mitigating energy poverty, ensuring inclusive citizen participation, and promoting collaboration among municipalities, private companies, societal organizations, and energy cooperatives. This research project has provided insights into the challenges and opportunities related to energy justice in the RES Rotterdam-The Hague region.

Policy recommendations have been identified at the national, regional, and local levels to address the challenges and improve the governance of the energy transition in the Rotterdam-The Hague region regarding energy justice. At the national level, it is recommended to provide local governments with structural financial support to effectively lead the energy transition. On the regional level, the focus should shift from governing to facilitating the sharing of knowledge between local governments and fostering collaboration in cross-border projects. At the local level, improving citizen participation in decision-making, striving for 50% ownership in energy projects, and starting-up insulation programs are crucial steps towards a more just energy transition. By implementing the energy justice framework and recommendations, governments at all levels can work towards achieving a just energy future.

However, the study acknowledges limitations, such as potential subjectivity and bias in the research, limited interview samples, and the need for broader exploration across other regions. Future research could extend the investigation to other areas, validate and understand citizen groups' perspectives, and explore strategies for meaningful citizen participation in decision-making. Additionally, studying the effectiveness of policy recommendations and exploring the adoption of energy justice-based regulatory frameworks are avenues to enhance equitable energy transitions.

In conclusion, this thesis contributes valuable insights into the local and regional governance of energy transitions in relation to energy justice and energy poverty. By addressing the research objectives and examining the Rotterdam-The Hague area as a case study, this research paves the way for more inclusive and equitable energy transition practices across regions and countries.

Preface

As I stand at the end of a remarkable journey, I am humbled to present this master's thesis, the end product of five years of dedication and hard work at the faculty TPM at TU Delft. This final project has been a defining process in both my academic and personal growth, putting my endurance and discipline to the test. When I began this project, I did not yet know that this would be an enjoyable experience.

In this Preface, I want to express my gratitude to all those who have helped me in shaping this thesis and supported me along the way. First and foremost, I want to thank my TU Delft Supervisors, Amanda Martinez Reyes, Thomas Hoppe, and Özge Okur. Their guidance, encouragement and feedback were necessary for this master's thesis project. Their expertise and responses to all my e-mails made the process so much smoother and their constructive feedback on my draft versions helped elevate the quality of the work. I really appreciated working together with all of them.

I'm also going to thank my family, who may not have fully grasped the research I was working on, but their support, belief and encouragement in this project were truly heartwarming. And to my girlfriend, I owe a special thanks as well, as her ability to put my feet back on the ground was really necessary throughout this project. Her patience, understanding and support, even when my brain felt fried, made all the difference. Also one short thanks to my friends and one specifically for his brainstorms on my project, which gave interesting insights into local governments.

This last thanks I owe to the participants in this study, who were nice enough to help me collect data. Without them, I could not have written a conclusion on the research questions. Their involvement and willingness to share their knowledge and insights played a huge role in this project.

This master's thesis project has been a learning process for me, teaching me patience, persistence and the ability to conduct interviews effectively. These skills will undoubtedly become useful in my future activities. I am excited to use these improved skills at VIKTOR, where I'm going to help construction and engineering companies in their digital transformation, a complex system in itself.

To everyone who has been part of this journey, directly or indirectly, I wanted to thank you one last time. My time at the TU Delft has been a truly remarkable one with lots of memories.

May reading this thesis bring you new and valuable insights!

Sincerely,

Sybren Wolters
8-8-2023

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1. Introduction

The issue of climate change presents a pressing and complex challenge that needs action now. The climate problem is primarily driven by the greenhouse effect, whereby the emission of greenhouse gases, such as carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) by human activities, contributes to global warming and with that causes climate change. The invention of the steam engine around 1750 marked a turning point in human history, leading to a transition from predominantly wood-fired emissions to the extensive use of fossil fuels, which can be classified as one of the first energy transitions. Around the early 20th century, it became clear that emissions of CO₂, emitted when burning fossil fuels, have a positive effect on global warming, when Callendar (1938) highlighted the potential consequences of doubling CO₂ levels, predicting a 5- to 6-degree Celsius rise in global temperatures.

In recent years, the devastating effects of climate change on the environment have become increasingly known. The IPCC (2021) warns of rising sea levels, increased amounts of floods and droughts, and various other hazardous outcomes associated with a warming climate. The consensus among scholars is that global warming is predominantly caused by human activities (Cook et al., 2013) and it is necessary to implement mitigation strategies. Governments worldwide have responded to these calls by implementing measures to address climate change. One of the early collective endeavours was the establishment of the Kyoto Protocol in 1997, aiming to reduce greenhouse gas emissions by specified percentages across participating countries (United Nations, 1998). Subsequently, the Paris Agreement, signed in 2015 by numerous nations, committed to limiting global warming to below 2 degrees Celsius, preferably to 1.5 degrees Celsius (United Nations, 2015). The European Union has set a goal to achieve climate neutrality by 2050 (European Commission, 2018), and the national government of the Netherlands is also committed to this goal as outlined in the Climate Accord (Rijksoverheid, 2019). Climate neutrality means that the sum of the carbon emissions and the carbon captured in a certain region (this case the EU) are equal to zero. Basically, it means that the European Union does not emit more greenhouse gasses than it captures.

While multiple sectors contribute to greenhouse gas emissions, the energy sector can be seen as the largest emitter (Ritchie & Roser, 2020). Decarbonising this sector is a significant challenge, as it currently relies heavily on fossil fuels (Centraal Bureau voor de Statistiek, 2022; Tian et al., 2022). Energy has become an essential aspect of modern society, providing heating and electricity, and is considered by Trully (2006) as a fundamental human right. Thus, transitioning to more sustainable energy sources is important in achieving climate neutrality by 2050. An energy transition involves shifting from one energy source to another. In this case, it entails a shift away from fossil fuel-based energy towards renewable alternatives like solar and wind energy. Additionally, it entails measures such as phasing out gasoline-fueled vehicles, reducing carbon emissions in construction and decarbonising chemical processes, and exploring alternatives to gas-based heating.

Given the international nature and substantial investments required to address climate change and facilitate the energy transition, it is seen as a highly complex problem. Furthermore, it extends beyond only technical considerations and has huge societal implications as well, necessitating substantial changes for citizens and their communities. As a result, the government faces additional challenges related to climate and energy justice, energy poverty, and the governance of the transition.

Climate justice is a concept that has gained attention recently as the mitigation of climate change is becoming more urgent. The theory suggests that the impacts of climate change are not evenly distributed and that vulnerable communities are facing a larger burden than the more wealthy communities. The benefits of emitting CO₂ over the recent years have benefited wealthy countries more than poorer countries, which highlights a growing disparity. The theory goes further than only environmental concerns and includes equity, fairness and human rights (Schlosberg, 2013). The theory calls for a climate action approach that incorporates both the root causes (e.g. greenhouse gas emissions) and possible injustices.

The foundations of energy justice can be traced back to the broader theoretical concept of environmental and climate justice (Schlosberg, 2013). Energy justice is a relatively new field of research in energy-related literature (Heffron, 2022). This growing interest in the theory is not coincidental, considering the increasing integration of the usage of energy in our lives. Energy plays, as stated, a fundamental role in our society and can be viewed as a basic human right (Trully, 2006). The framework of energy justices incorporates the thought that everyone should have access to affordable and clean energy, while also being involved in the decision-making process (Jodoin, 2021). The framework consists of five tenets which are respectively, distributional justice, procedural justice, justice as recognition, redistributive and cosmopolitan justice.

Closely related topics to the energy justice concept are energy poverty and citizen participation and stakeholder engagement. Energy poverty is related to the distributional justice tenet, the definition of energy poverty is defined by TNO (2023) as low-income citizens that either experience high energy prices or live in low-quality energetic homes. Mulder et al. (2023) add three dimensions to energy poverty, energy prices, the energetic quality of the housing and the ability of citizens to participate in the energy transition. Energy poverty has been growing due to events like the war in Ukraine and the COVID-19 crisis, as energy prices have risen. This is cause for concern and requires further research into measures that alleviate these problems and the groups who experience these issues, which are mostly located in rural or urban areas.

Stakeholder engagement and/or citizen participation are important in the energy transition, not only to alleviate energy poverty but also to work towards a just energy transition. Furthermore, stakeholder engagement and citizen participation could provide more support for energy projects (Firestone et al., 2017). Furthermore, it can help in ensuring that all relevant information as well as input from relevant stakeholders is taken into account and come to the most informed decision (O'Faircheallaigh, 2010). It is therefore important to include citizens in the energy transition and the energy transition decision-making, which has need to be further investigated.

The ambition to become climate neutral by 2050 requires substantial investments and effective governance. The Dutch government has taken a fairly new approach to governance to this transition. Normally, the Dutch government operates on different levels, including the national, regional and local levels as well as the water boards, each with distinct roles and responsibilities. Most often the local governments are carrying out the plans of the national government while having a certain amount of own freedom to achieve the goals set by the national government. However, the national government recognises its lack of local knowledge needed to make the plans work. The energy transition has high complexity and is context-dependent, making it impossible to implement one size fits all plans, therefore it has to be carried out locally. But, another characteristic of the energy transition is that it is crossing local borders, making it important for the local stakeholders to collaborate (Handreiking Regionale Energiestrategie Update, 2022). Therefore, the national government has instated a regional approach and divided the Netherlands into 30 energy regions, called regional energy strategies to govern the energy transition (*RES Regio's Op De Kaart - Regionale Energiestrategie*, n.d.).

Regional coordination involves governments, water boards, and private entities, enabling a bottom-up approach (Hoppe, 2021). However, the voluntary implementation of the Regional RES and potential intervention by the national government can undermine local preferences (Hoppe, 2021). The RESs do also encounter challenges, beginning with the diverse stakeholder involvement. Which could lead to unclear roles and responsibilities, according to Van Dijk et al. (2022). Awareness and meaningful engagement of stakeholders are needed to make the regional approach successful. Coordinating and making decisions with numerous stakeholders is complex, requiring the alignment of goals and interests (Engelenburg & Maas, 2018). The RESs can bridge local and national energy transition plans (Hoppe & Miedema, 2020). However, the involvement of diverse stakeholders risks overlooking the interests of local stakeholders and citizen groups, potentially leading to underrepresentation and marginalization in decision-making.

While the Netherlands is planning to get a headstart in the energy transition, it becomes clear that there are also concerns around energy justice raising. The first is that, partly due to the war in Ukraine, energy poverty has seen a rise, mostly located in the periphery or the large cities (TNO, 2023). Furthermore, there are more calls for citizens to participate in energy decision-making as well. Limited attention has been given to the regional governance approach adopted by the Netherlands for managing the energy transition within the academic sphere (Hoppe & Miedema, 2020). Similarly, the local scope of energy transition governance has been understudied (Swarnakar & Singh, 2022).

The knowledge gap addressed in this thesis is therefore understanding the governance methods of the energy transition in light of energy justice in local and regional governmental bodies. Seeking to understand if the energy justice framework is incorporated in the current governance structures, as called for by Haldar et al. (2023) and Qian et al. (2022). Also partially looking to contribute to closing the knowledge gap presented by Hoppe & Miedema (2020) about limited research of regional governance and the calls of Swarnakar & Singh (2022) to research the local governance of the energy transition. Furthermore, Hoppe (2021) expresses concerns about energy justice, public values and energy poverty in this region, this thesis will also contribute to his calls for investigating this area further.

1.1 Research Objectives

Energy and climate justice have gained ground recently in the academic literature related to the field of energy. Moreover, there are many calls to incorporate this framework more into decision-making (Haldar et al., 2023; Qian et al., 2022). In the Netherlands, the energy transition is being governed by tradeoffs between a bottom-up and top-down perspective, on a local and regional level. This is relatively new to the academic world and limited attention is given to this approach in the academic literature (Hoppe & Miedema, 2020), the same goes for the local scope (Swarnakar & Singh, 2022). This research will therefore primarily focus on understanding the decision-making processes around the RES and how they are currently dealing with energy justice. Furthermore, it is crucial to understand how citizens are feeling the energy transition as well, to see if they are experiencing any energy injustices as well as understanding how they might occur. The research objectives related to this thesis are as follows:

- Understand the decision-making process related to the energy transition on a local/municipal level;
- Understand the decision-making process related to the energy transition in the Regional Energy Strategy of Rotterdam- The Hague area;
- Analyze the current public opinion and those of the citizens regarding the energy transition with a light on energy justice;
- Describe where energy injustices might occur;
- Delivering possible improvements to mitigate these energy injustices.

The research will thus gain insights into the way how local and regional governments are dealing with the energy transition and if and how they make sure that it is a “just” energy transition. Thus tapping into the knowledge gap previously formulated.

1.2 Research Questions and Sub-questions

Considering the challenges outlined in the previous paragraphs and the research objectives of this study, which are in summary to understand the decision-making process of the region as this is underrepresented in academic research and understand energy justice in this region. The primary research question addressed in this research is as follows:

“How do the local and regional governmental bodies within the Rotterdam- The Hague region deal with the energy transition in light of Energy justice and Energy poverty?”

In order to effectively address the main research question and bridge the existing knowledge gap, several sub-questions have been formulated to guide this thesis. By answering each of these sub-questions, a better understanding of the local and regional governance of the energy transition in relation to energy justice and energy poverty can be achieved and the perspectives of the different citizens on the energy transition can be taken into account. Formulating an answer to the subquestions will therefore lead to such an understanding of the research topic that the main questions can be answered as well. The sub-questions are as follows:

SQ1: “How does the current energy decision-making process of the Rotterdam- The Hague energy strategy and its local governments work?”

1a: “What are the challenges and barriers faced by local and regional governmental bodies in this region in addressing energy justice and energy poverty?”

1b: “How do local and regional governmental bodies in this area engage with stakeholders?”

SQ2: “What are the perceptions, experiences, and needs of citizens and stakeholders in relation to energy justice and energy poverty in the Rotterdam- The Hague region and which groups are experiencing these energy injustices?”

SQ3: What are the potential improvements or alternative approaches that can help the efforts of the RES Rotterdam- The Hague area (and its local governments) in achieving energy justice?”

1.3 Societal Relevance

The energy transition is not solely a technical challenge but also entails significant societal challenges. It directly impacts the citizens within their homes and communities, making it crucial to ensure a just transition that addresses their needs. Despite the calls within the climate accord to broadly engage the public (Rijksoverheid, 2019), there are concerns about the inadequate involvement of citizens. Affordability is another issue raised in the energy transition, which is incorporated in the RES (Handreiking Regionale Energiestrategie Update, 2022). However, the number of citizens experiencing energy poverty has been going up in the last few years, partly due to the COVID-19 crisis and the war in Ukraine, and needs immediate attention (TNO, 2023). These instances of potential energy injustices within the region highlight the societal importance of identifying and addressing these issues.

This research aims to reveal energy injustices experienced by various groups and research the current measures implemented currently implemented, if any, to mitigate energy injustices. By researching the decision-making processes and flaws in current approaches, this research provides valuable insights for policymakers. Furthermore, by highlighting the significance of the energy justice framework and providing recommendations, this research contributes to guiding decision-makers in achieving a just transition for the whole society. Therefore, the study holds societal relevance by addressing the concerns and challenges faced by citizens and providing guidance for policymakers by creating a more just energy transition.

1.4 Relevance to Cosem

The Master's program in Complex Systems Engineering and Management looks at developing solutions within socio-technical systems. By integrating regulations, subsidies, human behaviour, and technical aspects, a more holistic view of the social-technical system is created (TU Delft, n.d.). The energy transition encompasses all these dimensions of a socio-technical system, making it an ideal subject for investigation within the field of Complex Systems Engineering and Management. This thesis will specifically examine the governance structures behind the technical aspects of the energy transition, adopting a social perspective that aligns with the principles of Cosem. By delving into the interactions between governance structures and social dynamics, this study aims to contribute to a more holistic understanding of the energy transition and propose solutions that promote social justice within the complex system.

This master's thesis is also relatable to at least two courses followed in the master's program, which were climate ethics and managing multi-actor decision-making. As energy justice is a theoretical concept born out of climate justice, which as thought in the climate ethics course it is relatable to each other. In the climate ethics course, there is thought about how to think in a holistic and ethical way about climate and justice issues, which is beneficial for writing this thesis. The course about managing multi-actor decision-making was all about governance when a lot of stakeholders are involved in the process, just like in the energy transition and especially with citizen participation, which is also related to this master thesis

1.5 Structure of the Thesis

This first chapter outlined the challenges the Dutch government faces in terms of climate change and the energy transition and laid out the contribution of this thesis to the current literature and addressed the knowledge gap tapped into. In the following chapter, a literature review will be presented, giving a basis for the core concepts and the current state of academic research in these subjects. The second chapter will also present a theoretical framework to give guidance to the thesis. The third chapter will present the methods that will be utilized in the thesis. The fourth chapter will give the results and the fifth will give an answer to the research questions and provide some recommendations for policy and further research.

2. Governance of the Energy Transition

This chapter will dive into the current governance structures that exist when governing the energy transition. Furthermore, the choice of governance within the Netherlands will be explained and delved into. This chapter will help set the stage for the rest of the research and contribute to addressing sub-question one.

2.1 Governance Structures

As governments are recognising the issues of climate change and agree on the need for sustainable development, governing the energy transition properly is crucial. There are various governance structures exploited in the energy transition. From the top-down approach by the national governments of countries to the bottom-up approach from a local perspective and everything in between. Both national and local governance have received attention in the current academic literature. The regional level, despite its significance in the governance of the energy transition which often spans multiple municipalities (Hoppe & Miedema, 2021), is underrepresented in academic literature.

National governance of the energy transition is top-down and seen as a crucial part of the energy transition. Designing the energy transition on a national level can give guidelines and frameworks for the local and regional governments to work with. Furthermore, the national level is providing the financials for both to carry out the plans they make, but local and regional governments do have a certain amount of manoeuvring space within the frameworks provided by the national governments. However, the national government often lacks the local knowledge needed to govern the energy transition properly, hence the local governments are often crucial for the energy transition. The local governments are also responsible for including and engaging with various actors, such as citizens, energy cooperatives and other local organisations which could help sustainable development (Meister et al., 2020). Engaging citizens and other institutions can both bring support for the policies and energy projects and enhance energy justice (Lelieveldt & Schram, 2023). Including local knowledge fosters a bottom-up approach in the governance of the energy transition.

However, the energy transition does not end at the border of local governments, hence it is important to collaborate between municipalities. Hoppe and Miedema (2020) therefore suggest establishing a separate governance level between the local and provincial levels. This approach is currently adopted by more Western European countries, where “mini provinces” and “city regions” are set up (Hoppe & Miedema, 2020).

However, Hoppe & Miedema (2020) also emphasized the criticism such an approach received, including the lack of clarity of responsibilities within the regions and democratic legitimacy. There are some more challenges to overcome regarding governance on a regional level. Van Dijk et al. (2022) state that the involvement of many stakeholders, as is the case in this approach, can lead to unclear roles and responsibilities within the region. They furthermore argue that there is a lack of awareness and it is hard to engage all the relevant stakeholders in the region. This can slow the progression of the energy transition, despite the need to move fast. Lelieveldt & Schram (2023) suggest that there is limited citizen participation on the regional level. When local or regional goals are not met,

according to the national government, it is possible for the national government to step in and achieve this goal, possibly neglecting the will of the local citizens (Hoppe, 2021). This shows the hierarchical relationship between the governmental levels and the need for a multi-level-governance approach.

As stated earlier, the national and local level governance of the energy transition has received a considerable amount of attention in the academic literature, however limited is written on the regional level governance (Hoppe & Miedema, 2020). Recent studies show that there is a growing amount of research in this field, as demonstrated by Hoppe (2021), De Leeuw & Groenleer (2018), Kempenaar et al. (2020) and (Lelieveldt & Schram, 2023). On the local level, Swarnakar & Singh (2022) suggest that there is little attention to the energy justice aspects. This research will tap into both mentioned gaps and will relate energy justice to the governance aspects of the energy transition.

2.1.1 Regional Energy Strategies

As stated in the previous subsection, the Dutch government have three different layers of government all working together on achieving the climate goals. This thesis will be looking at both the local and regional levels of the energy transition in the Netherlands in pursuit of becoming climate neutral by 2050.

The energy transition supersedes the municipal borders and a need for regional governance is therefore deemed significant (Hoppe & Miedema, 2021). The national government has divided the Netherlands into thirty different regions, which are called regional energy strategies (RES). Hereby recognizing their lack of local knowledge needed to govern the energy transition and giving more decision-making power to the local governance. These regions are seen as a trade-off between the top-down and bottom-up approach and have given a significant role to the municipalities within the energy transition (Hoppe, 2021). The goal of all energy regions together is to deliver a minimum of 35 TWh of renewable energy (Hoppe, 2021; Rijksoverheid, 2019; De Leeuw & Groenleer, 2018). The RES can be seen as a collaboration between different parties relevant to the energy transition in those specific regions, including municipalities, the provinces, the waterboards and other (private) organisations within the region (Handreiking Regionale Energiestrategie Update, 2022).

This regional approach has its benefits to bring to the table. Decentralising the governance of the energy transition provide an inclusion of local knowledge in policy making. Local governments have a better grip on the local developments, public opinion and the needs of citizens in their municipality and give them the space to develop tailor-made policies (Hoppe & Miedema, 2020), this could increase the support of the locals and benefit the overall energy transition. Furthermore, local governments are much closer to their inhabitants and are therefore able to involve stakeholders more easily.

However, with each new approach, there are hurdles to overcome as well. The first one is that the regional approach needs to ensure political legitimacy and trust in the government (Hoppe, 2021). The involvement of various stakeholders in the RES can pose challenges as well, Van Dijk et al. (2022), state that different stakeholders bring different opinions which should be taken into account and pose clarity and responsibility issues.

2.1.2 Stakeholders of the RES

As earlier discussed the RES consists of various stakeholders within each region, these include local governments, the province, private stakeholders and waterboards. In contrast to the members of the RES, the RES does not have any formal autonomy in making decisions. These stakeholders are involved in the process of making agreements and decisions regarding the energy transition in the region. However, each of the involved parties has different roles, responsibilities and knowledge. It is important to understand how the RES is making decisions regarding the energy transition before energy justice can be researched in this region. As the energy injustices in this region, if any, might emerge out of internal or external factors to the RES structure.

The first and most important group of stakeholders are the municipalities or the local governmental bodies. In each RES region, there are a certain amount of local governments participating. They often come in different forms and sizes, from large cities and densely populated areas to small villages and rural areas. The municipalities are consisting of two parts, the official side with civil servants and a democratically chosen part of the municipalities. The civil servants are working on the daily practice in the municipalities while the democratically chosen part is involved in the decision-making. The democratically chosen part consists of both the city council and the college of B&W (Mayor and Aldermen). The civil servants are helping the city council and college of B&W with making a well-considered decision, by sharing knowledge and keeping them up to date with the latest information. Both these groups are also involved in Regional Energy strategies, carrying out more or less the same tasks.

In the regions, not only local governments are present, but also the provinces in the area of the respective RES. Similarly to the local government, they consist of both civil servants and a democratic side. The function of the province is also similar to that of the local government, but the provinces are on a higher abstraction level and more conceptual.

Waterboards are also involved in the RESs, which are also governmental bodies. These also have a civil servant side and a democratic side. They are responsible for the water within the region and include the supply of fresh water to nature parks, building and maintaining dikes and flood defences and operating wastewater treatment plants (Ministerie van Algemene Zaken, 2021). The waterboards are included in the RES although not directly involved in the energy transition from a decision-making point of view. They can however help to gain a more sustainable water supply, research the possibilities of warmth out of water and support other water and energy-related projects.

In most RESs there is also a group of relevant stakeholders, like private companies which have something to do with the energy transition, involved in the process. These are often the DSOs and energy corporations, which could contribute to achieving the energy goals set by the national government.

As there are various different actors involved in the RES process, with all different responsibilities, motivations and knowledge, the dynamics between these groups are also different. Van Dijk et al. (2022), state that these different responsibilities could pose challenges for governance. Below the general process of decision-making within the RES Rotterdam- the Hague are given, this might differ from the ways other RESs in the Netherlands operate, but all RESs should be governed in the same.

The ANE (Ambtelijk Netwerk Energie) consist of various civil servants involved in their respective governing bodies or parties engaged in the energy transition. The group meets to serve as a preparatory session for the BNE (Bestuurlijk Netwerk Energie). The ANE provides topics, agenda points, research, and support for the BNE meeting, where all Aldermen from different municipalities, as well as other decision-makers from other governmental bodies and entities (such as Stedin), are represented. Within this group, decisions/agreements regarding the RES are formulated. Stakeholders within the region have the opportunity to contribute input to the BNE group through the RES platform, which can be regarded as a form of participation. Additionally, there exists a project team comprising RES employees who support the process by organizing meetings, facilitating discussions, and facilitating knowledge sharing among members.

The RES has two additional groups, namely the "client team" and the "steering group". The former consists of representatives from the ANE and is responsible for implementing the decisions made in the BNE. The latter, comprised of representatives from the BNE, ensures the effective collaboration of all parties involved in the RES. Ultimately, the cycle of meetings follows the sequence outlined below:

Organizational structure and consultation cycle

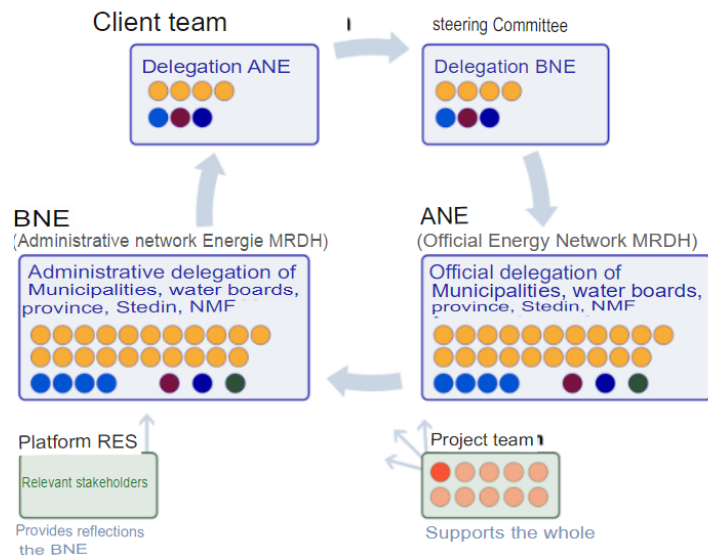


Figure 1: Cycle of meetings RES (Organisatie / RES Rotterdam Den Haag, n.d.)

2.2 Concluding on Regional Governance

This chapter has delved into the current governance structures employed in the Netherlands in the energy transition. The energy transition, which can be seen as a complex process, is in need of a structured governance approach. As stated in the chapter, the governance structure of the Netherlands is following the classic approach, so with national, provincial and local governance. Additionally, the Netherlands has adopted an innovative structure, which is the regional approach. The Netherlands has been divided into thirty regional energy strategies (RES). These strategies acknowledge the cross-border nature of the energy transition and the fact that a tailor-made approach is needed, therefore incorporating local knowledge into the decision-making. While the RES is a collaboration between municipalities, provinces, waterboards and other relevant stakeholders, it lacks the formal mandate to employ executable policy.

The governance structure of the Netherlands begins with a classical government approach, where the national government is setting goals, high-level plans and policy frameworks. It furthermore provides the financials to the other levels of government. The plans provide a framework for the local governments, which are ultimately responsible for accomplishing the goals set by the government but can give their own vision on the execution. In addition to the conventional governance structure, the national government have appointed thirty regional energy strategies to help govern the energy transition. These are collaborations of municipalities, provinces, waterboards and other relevant stakeholders. The RES's aim is to incorporate local knowledge into energy decision-making. The RES does not have a formal mandate to employ policies, which has to go through the city councils of members but serves as a platform for information exchange, joint goal-setting and cross-border cooperation. The RES can be seen as a trade-off between local and national governance.

This chapter has provided an initial overview of the literature and the current governance structure of the Netherlands. This will provide a benchmark for further research into the governance process and interactions between stakeholders. This will be further investigated with the stakeholder interviews.

3. Literature Review and Theoretical Framework

This chapter combined with chapter 2 presents the literature review and the theoretical framework and establishes a strong base knowledge of the core concepts explored in the thesis. This theoretical framework will guide the process of answering the main- and sub-research questions. Chapter 3 gives a background on the energy justice framework and related topics and is used to support the answer to sub-question 2.

3.1 Energy Justice

3.1.1 General Concepts of Energy Justice and the Energy Justice Framework

Energy justice is a relatively new field of research in energy-related literature (Heffron, 2022). This rapid emergence of this concept is not surprising, as energy has become more and more integrated into our lives. Almost everything we do uses energy and it is by some academics even labelled energy as a basic human right (Tully, 2006). The concepts find their roots in environmental and climate justice (Schlosberg, 2012), which is a theoretical concept that states that the burdens and benefits of human-caused climate change are not equally distributed. According to the framework of energy justice, every citizen should have access to affordable and clean energy, as well as be involved in the energy decision-making process (Jodoin, 2021). Sovacool and Dworkin (2015) describe energy justice as a global energy system that fairly distributes the costs and benefits of energy service and one that has representative and impartial energy decision-making. Both definitions of energy justice are similar.

3.1.2 Tenets of Energy Justice

As stated earlier, a lot of research is published in the last decade on this subject. However, it is understood that the framework consists of different tenets, which are: Distributional justice, procedural justice, and justice as recognition (Jenkins et al., 2016). But, other tenets such as restorative and cosmopolitan justice are used in the literature (Qian et al., 2022). The definition of the three main tenets will be given and linked to the concepts of this thesis, the others will be shortly touched upon.

To start with distributional justice, which is the tenet that identifies where energy injustices are or might be. The tenet calls for equal distribution (with a disregard for age, gender, race, etc) of the burdens and benefits of the energy transition (Jenkins et al., 2016). However, there are several instances where this might not be the case. As self-generation technologies, such as solar panels and heat pumps, are expensive, not every citizen can afford these technologies. This causes a concentration of these technologies in the wealthy communities, which will benefit from subsidies as well as the cheaper energy accompanied by these technologies, this is an instance of an unequal distribution of benefits. This is also related to energy poverty (Manjon et al., 2022), which is a concept closely related to energy justice, and coming backs as well.

Procedural justice is in short, the process in place to ensure that stakeholders and citizens are being involved in the energy policy-making or can at least give their opinion on the decisions being made. So, this tenet suggests that all affected stakeholders should be involved in the decision regarding their energy future (Sovacool et al., 2016). The way to do this can vary from active participation to organizing information evenings to hear concerns and providing only information, also known as the participation ladder (Arnstein, 1969). In Chapter 3.1.4, citizen participation is further explored. Procedural justice is the process in place to do this. In large projects covering multiple regions, this is often hard to accomplish, as this slows down the process of decision-making due to a large number of stakeholders and their opinions (Engelenburg and Maas, 2018). However, Swarnakar and Singh (2022) show that citizen participation can increase the overall perception of energy justice.

The justice as recognition Tenet of the energy justice framework is related to recognising and understanding the different needs of specific vulnerable (minority) groups, such as older people and minorities, regarding energy-related issues (Lee & Byrne, 2019). According to Feenstra et al. (2021), this is currently not the case in national policy. Justice as recognition is all about defining who is experiencing energy injustices, and this can be related back to the procedural justice tenet by involving these groups in the process and giving them a voice. Misrecognition of groups can cause injustices and the loss of important information and insights about these groups (Jenkins et al, 2016).

Besides the main tenets of energy justice, there is literature on other tenets as well, such as cosmopolitan justice and restorative justice. The first one relates to the impact of actions taken in one country on other countries. And the second aims to rectify injustices which are committed in the past (Heffron et al., 2021).

There are some theories which are proven or conceptually viable to increase energy justices in within the energy transition. One of the most bespoken and earlier mentioned ways to increase energy justice and the social exception of different energy projects is citizen participation (Evensen et al., 2018; Lavrijssen & Vitez, 2020). This can come in a lot of forms of shapes, such as energy democracy. Szulecky (2018) argues that energy governance should be more democratic and made a framework to do so. Another way to increase energy justice with the usage of citizens, or in this case by citizens, is setting-up energy communities (Van Bommel & Höffken, 2021). These communities are investing in self-generation technologies and are operating like small energy companies, they are working together and in a (mostly) democratic way. Correljé (2021) argues to involve citizens in energy decisions and work together with governments to a workable agreement, to gain procedural justice. Another way to increase energy justice, and specifically energy poverty, is argued by Stojilovska (2021) and that is to introduce an independent Ombudsman to reveal and reduce institutional energy injustice. The case studies this article conducted related to the Ombudsman revealed that it was successful and that the energy companies themselves have a high amount of responsibility to limit energy poverty.

3.1.3 Energy Poverty

Energy poverty is a significant aspect that is closely related to the concept of energy justice, specifically the distributional justice tenet of the energy justice framework. In the context of Dutch national policy, energy poverty has emerged as a concept of concern (Feenstra et al., 2021). It refers to households with low incomes that either face high energy costs or live in low-quality housing with poor energy efficiency (Mulder et al., 2023; TNO, 2023). Based on this definition, it is estimated that there are approximately half a million energy-poor individuals in the Netherlands. Mulder et al. (2023) argue that the ability to participate in the energy transition should also be considered within the energy poverty definition. The cost of energy plays a crucial role in energy poverty, as highlighted by Bouzarovski and Herrero (2017). Many Dutch citizens rely on natural gas for heating and cooking, which has been promoted since the 20th century after the discovery of the Groningen gas field. The prices of natural gas directly impact the energy costs for these households. Additionally, the generation of electricity also depends on natural gas, linking electricity prices to gas prices. Recent developments, such as the closure of the Groningen gas field and geopolitical events like the war in Ukraine and the COVID-19 crisis, have led to significant increases in gas prices, exacerbating energy poverty in the Netherlands (Streimikiene & Kyriakopoulos, 2023). Energy-poor groups are predominantly concentrated in peripheral and urban areas (Bouzarovski & Herrero, 2017). This is evident in regions like Groningen, Drenthe, Rotterdam, and The Hague, as identified by Mulder et al. (2023) and Croon et al. (2023), who highlight the high levels of energy poverty in these areas.

The issue of energy poverty is growing, and higher energy prices can push vulnerable individuals into financial difficulties and even debt. The theory of financial scarcity suggests that individuals in poverty may make less rational economic choices (De Bruijn & Antonides, 2021). Poverty and energy poverty can contribute to increased stress levels and have adverse effects on health (Jachimowicz et al., 2022). For instance, research conducted in Australia found a decline in self-assessed health among individuals living in energy poverty (Churchill & Smyth, 2021). These health-related concerns underscore the need to address energy poverty seriously. Strategies need to be developed to address energy poverty and alleviate its impact in the future (Streimikiene & Kyriakopoulos, 2023). Feenstra et al. (2023) argue that incorporating energy poverty into energy transition policies is an opportunity and a necessity to achieve a just transition. However, they also note that energy poverty is often overlooked in welfare states, presenting a challenge in effectively addressing this issue. To develop effective strategies, it is crucial to adopt a district-specific approach and analyze which groups are experiencing energy poverty, as suggested by Mashhoodi and Bouman (2023).

Incorporating energy poverty into energy transition policy-making is crucial to achieving a just transition. In addition to addressing distributional justice, involving individuals in the energy transition is vital. This can be related to the other two main tenets of the energy justice framework, namely justice as recognition and procedural justice. Mulder et al. (2023) argue that energy poverty is, in part, a consequence of the slow diffusion of energy-saving technologies, preventing about half of Dutch households from participating in the energy transition. This lack of participation may result from financial constraints or the inability to make changes in rented housing. Furthermore, 75% of energy-poor individuals reside in social housing, indicating the importance of considering the unique circumstances of this population.

To achieve a just energy transition, it is essential to address energy poverty effectively. Citizen involvement in the energy transition is critical in this regard. However, financial resources and the availability of suitable housing pose barriers to participation. Therefore, district-specific strategies need to be developed, and an investigation of current measures in different districts is necessary to identify areas for improvement.

3.1.4 Citizen Participation

As stated earlier, a closely related subject to the energy justice framework is citizen participation. It is related to both energy justice tenets: procedural justice and justice as recognition, and it is seen as a crucial part of achieving a just energy transition. Citizen participation has been present in decision-making for some time now, as documented in the academic literature on this subject, and is considered crucial for local democracy (Michels & De Graaf, 2014). One of the more frequently referenced academic articles about citizen participation is that of Arnstein (1969), where he discusses different levels of citizen participation, ranging from basic informing to including them in actual decision-making, known as the participation ladder.

Involving citizens in decision-making has several benefits, both in regular decision-making and in the context of the energy transition. One reason for organizing citizen participation, related to energy justice, is to incorporate local knowledge into decision-making. This is also the rationale behind the Dutch national government's decentralization of the energy transition, giving local and regional governmental bodies the lead role. Incorporating local knowledge into decision-making can lead to a better fit in the local context, which is essential for governing the energy transition, as there is no one-size-fits-all policy. Furthermore, citizen participation could provide a platform for underrepresented groups to express their voices, incorporating their opinions and struggles into decision-making for a more inclusive outcome. Citizen participation can also lead to greater societal involvement and increase the legitimacy of decisions made (Streimikiene & Kyriakopoulos, 2023). Lastly, when done correctly, citizen participation can improve the overall energy justice perspectives of citizens (Swarnakar and Singh, 2022). Therefore, citizen participation can be used to generate support for decisions or energy projects.

However, there are also challenges when it comes to citizen participation. The first challenge is that it requires a significant amount of time and resources to organize. Identifying all stakeholders or at least a representative sample of the population can pose another challenge, and once identified, effectively reaching them can be difficult. Furthermore, proper timing of participation, setting realistic expectations, and maintaining transparency in communication are essential. If not done properly, inadequate citizen participation can lead to unrest among citizens. Unchecked unrest could eventually escalate into serious conflicts (De Vries & Bouma, 2023). Introducing more people into the decision-making process and aligning their differing opinions also poses challenges, as noted by Engelenburg & Maas (2018).

There are many forms of citizen participation, which is also illustrated by the participation ladder of Arnstein (1969). The first form of participation can be seen as information sharing; this form entails keeping citizens up to date with energy projects or decisions. This can be done in multiple ways. The other end of the participation ladder is actively involving citizens in decision-making, which can be achieved through, for example, advisory councils. It is important to note that the city council, or the democratically chosen part of the municipalities, can also be seen as a form of citizen participation, as these politicians should be in contact with citizens and represent them. Lastly, a form of participation that can improve the support for energy projects and can be used within energy projects is financial participation, which gives the citizens in the neighbourhood of an energy project the ability to invest in a part of the project, benefiting from its profits. In the climate accord, the national government has set a (voluntary) benchmark of 50% local ownership, which means that at least 50% of new energy projects should be owned by local parties. This is also a form of financial participation. These listed forms of participation are not all possible forms; there are many possibilities of participation between the highest and the lowest places on the ladder.

In summary, citizen participation plays a crucial role in including diverse groups of people, integrating local knowledge, and addressing the experiences and barriers faced by marginalized groups. It contributes to garnering support for decisions and energy projects. However, there are several challenges associated with organizing effective citizen participation. Governments must navigate the balancing act between citizen expectations and opinions while considering their own perspectives. Overcoming barriers to meaningful participation can be complex. To enhance energy justice, involving all citizens in decision-making processes and energy initiatives is essential, though these approaches must be tailored and not universally applicable.

3.1.5 Principles of Energy Justice

Besides the three main and the other two additional tenets in the energy justice framework, there are additional principles sometimes combined with the energy justice framework. These principles, as formulated by Sovacool et al. (2017), are more tangible than the tenets described within the energy justice framework. Using them in combination with the “original” energy justice framework can give a good integration between a more fundamental view on the subject with a tangible result-driven view (Jenkins et al., 2021). Furthermore, these principles do not only incorporate Western energy justice but also make use of other non-western approaches to energy justice. The ten principles used by Sovacool et al. (2017) can be described as.

1. **Availability:** Individuals are entitled to an adequate supply of high-quality energy resources that are suitable for meeting their specific needs.
2. **Affordability:** The cost of energy services should not exceed 10% of the income of all individuals, including those who aren't wealthy
3. **Due Process:** In the production and utilization of energy, countries should uphold due process and safeguard human rights.
4. **Transparency and Accountability:** All individuals should have equal access to accurate information regarding energy and the environment. Furthermore, energy decision-making processes should be fair, transparent, and accountable.
5. **Sustainability:** The depletion of energy resources should be done with careful consideration for savings, promoting community development, and taking precautionary measures.
6. **Intragenerational equity:** Fair and equal access to energy services is a fundamental right for all individuals
7. **Intergeneration equity:** Future generations should have the right to inherit a sustainable world free from the damaging impacts caused by our current energy system.
8. **Responsibility:** All individuals should have the responsibility to safeguard the natural environment and minimize the threats to the environment.
9. **Resistance:** All energy injustices should actively be opposed.
10. **Intersectionality:** By expanding the concept of recognitional justice, we can encompass new and evolving identities in modern societies. Additionally, we need to acknowledge the interconnections between energy justice and other forms of justice, such as socio-economic, political, and environmental justice

As stated, this framework can be combined to give a more holistic approach to energy justice and a practical view on the matter. But, how are these frameworks interacting with each other and are the principles of Sovacool, et al. (2017) able to fit in the different Tenets?

The first tenet of the energy justice framework is distributive justice, which focuses on ensuring an equitable distribution of the costs and benefits of the energy transition. This principle aligns with the principles of availability, affordability, and intragenerational equity, as they all emphasize the importance of fair access to high-quality energy resources for everyone.

Procedural justice is the second tenet of the energy justice framework, which advocates for the inclusion of all citizens in the decision-making process. This principle is connected to the principles of transparency & accountability and due process, as they emphasize the importance of fair and equitable rules for the energy transition and the provision of transparent information to all individuals.

The third tenet of justice as recognition in the energy justice framework can be associated with the principle of intersectionality. Intersectionality recognizes the diverse society and aims to address the rights and needs of different social groups within the energy system. This principle goes beyond energy justice and encompasses other forms of justice as well, emphasizing the interconnectedness of various social and identity-based dimensions in addressing inequalities and promoting inclusivity in energy decision-making.

The principles of resistance and responsibility can be connected to the fourth tenet of restorative justice within the energy justice framework. The principle of responsibility highlights the collective obligation to protect the natural environment and minimize energy injustices, while the principle of resistance emphasizes the active opposition to such injustices. Restorative justice is extended by these principles by recognizing the need to address past wrongs and work towards restoring justice.

Cosmopolitan justice, within the energy justice framework, can be connected to the principle of sustainability. It acknowledges that energy choices have global consequences and impact other regions, as well as the finite nature of energy resources. Additionally, intergenerational justice is an extension of this tenet, recognizing that the decisions we make regarding energy today have implications for future generations. It underscores the importance of considering the long-term effects and ensuring that the needs and rights of future generations are taken into account in our energy choices.

In this thesis, the comprehensive energy justice framework, encompassing all the tenets and principles discussed in the literature, will be utilized. The application of this framework will provide a tangible reference point for analyzing and evaluating the regional energy strategy of Rotterdam-The Hague, as well as the perspectives and interests of the stakeholders and citizens in this area. By examining the energy strategy through the lens of energy justice, a deeper understanding of the topic and its implications can be gained.

3.1.6 Theoretical Framework of Energy Justice

The energy transition is a shift towards a sustainable and low-carbon energy system, this not only brings a technical challenge but also a huge societal challenge. It is important to ensure an equitable energy transition. The energy justice theory suggests that everyone should have access to clean and affordable energy and should be involved in energy decision-making (Jodoin, 2021). The justice framework, including the tenets and principles discussed in the previous subsection, gives grips to asses if the energy transition is going in a just manner. This thesis will incorporate this framework by assessing the policies of the local and regional governments and dividing statements over the different tenets. In the following part, it will be shown how the framework is being used to do so.

1. **Distributional justice:** This tenet assess how equitable the distribution of energy sources, benefits, and costs are across different social groups. Furthermore, it investigates if energy projects and the impact of energy policies are not disadvantaging certain social groups.
2. **Procedural justice:** These asses the level of stakeholders' participation and engagement in policy-making processes. Furthermore, examining the transparency of information, decision-making criteria and the availability for citizens to provide meaningful feedback.
3. **Justice as recognition:** This tenet assesses the recognition of the rights and interests of citizens affected by the energy transition, incorporating local knowledge in decision-making.
4. **Cosmopolitan and redistributive justice:** Considering cross-border effects of energy policies and energy projects. Assessing mechanisms in place to address economic and environmental inequalities caused by earlier damage and fix these injustices.

These are the operationalisations of the Tenets and what each tenet is assessing regarding policy-making and energy projects. These are taken into account when setting up the interview protocol so that each of these tenets is asked of the participant. With these answers, an assessment of the current decision-making process and score regarding the energy justice framework can be made.

3.2 Governance Models

This thesis is seeking to understand how the current decision-making process is working in the Rotterdam- the Hague area in combination with the energy justice framework. It is also important to understand what kind of governance models are related to this approach. In this subchapter, two different kinds of governance structures are explored, the first one being the rounds model proposed by Teisman (2000) and the second is the Multi-leveled governance model (MLG).

3.2.1 Roundsmodel

The rounds model proposed by Teisman (2000) is considered a valuable framework for analyzing decision-making processes in complex policy situations such as the energy transition. This model helps understand the dynamics and interactions between stakeholders involved in decision-making processes. It consists of three key components: arenas, rounds, and actors.

In the rounds model, arenas represent the spaces where decision-making occurs. These are the platforms or forums where stakeholders come together to discuss and negotiate the subject of the decision-making process. Actors refer to the various groups or entities that participate in the decision-making process, including organizations, aldermen, civil servants, and other relevant actors.

Decision-making in complex issues like the energy transition involves extensive time and multiple discussions before reaching a final decision. These discussions are known as rounds in the model. During these rounds, actors exchange information, formulate options, and engage in debates. Each actor brings their unique perspectives, knowledge, and expertise to these rounds, shaping the discussions and influencing the outcomes of the round.

The rounds model emphasizes that decision-making is an interactive process that involves the participation of diverse stakeholders. Analyzing the decision-making process using this model helps us understand how different stakeholders are engaged and how their input is considered when making decisions. It highlights the importance of inclusivity, collaboration, and the integration of multiple perspectives in shaping effective and legitimate decisions.

In the context of the energy transition, the rounds model is particularly relevant because it recognizes the significant impact of the transition on various stakeholders, including private companies, governmental bodies at all levels, and citizens. The decision-making process surrounding the energy transition needs to be carried out carefully and in collaboration with all relevant stakeholders. This aligns with the principles of the energy justice framework, which emphasizes fairness, equity, and inclusivity in the energy transition process.

By applying the rounds model, the decision-making process regarding the energy transition can be analyzed to understand how different stakeholders are involved, how information is exchanged, and how options are discussed and considered. This analysis can show how different policies are made and if there are contributing to a just energy transition. It facilitates the identification of potential challenges, barriers, and opportunities in the decision-making process.

3.2.2 Multi-level Governance

The multi-level governance model can be used to analyze the current energy decision-making process in the Rotterdam-The Hague region and understand the challenges and barriers faced by local and regional governmental bodies in addressing energy justice and energy poverty. This model helps assess the communication and collaboration between different levels of governance, including the supra-national level (European Union), national level, provincial level, and local level, as well as the interactions and power dynamics among these levels (Teisman et al., 2018). Jänicke (2015) provides a schematic overview of this model related to the European Union.

In the context of the energy transition, the multi-level governance model allows for getting a better understanding of communication streams, interactions, and decision-making processes between these different levels of governance. It involves the roles and responsibilities of state actors, private stakeholders, and citizens in shaping energy policies and initiatives. The model provides insights into how power is distributed, how decisions are made, and how different actors influence the energy transition process.

Applying the multi-level governance model to the regional energy strategy in the Rotterdam-The Hague area reveals the emergence of a possible new level of governance represented by the Regional Energy Strategies (RESs), although it lacks a formal mandate to make any decisions. With increasing decentralization, regional and local actors are taking on more tasks and responsibilities from the national government in the energy transition. This shift creates new communication streams and interactions within the governance structure. Analyzing these dynamics and governance methods within the energy transition is essential to understand their impact on decision-making processes and outcomes.

Moreover, the model highlights the importance of involving private stakeholders, such as companies and citizens, in the energy transition. Engaging with stakeholders at different levels of governance allows for a more inclusive and participatory decision-making process. Understanding the perceptions, experiences, and needs of citizens and stakeholders in relation to energy justice and energy poverty in the Rotterdam-The Hague region is crucial for addressing energy inequalities and designing effective policies and initiatives.

By utilizing the multi-level governance model, the current energy decision-making process in the Rotterdam-The Hague region can be assessed in terms of communication, collaboration, and power dynamics between different levels of governance. This analysis can shed light on the challenges faced by local and regional governmental bodies in achieving energy justice and combating energy poverty. Furthermore, it provides a framework for identifying potential improvements or alternative approaches that can enhance the efforts of the Regional Energy Strategy (RES) and local governments in achieving energy justice in the Rotterdam-The Hague area.

3.3 Conclusion on the Literature Review

This research begins with a literature review to gain an understanding and provide an overview of the current state-of-the-art research on energy justice and also gain insights on the current governance of the Dutch energy transition, and the RES respectively. This chapter is also a theoretical framework presented that will be used throughout the research.

The energy justice framework has been explored, which is a relatively new field in energy-related research. The literature research revealed that the energy justice framework consists of 5 tenets, respectively distributional justice, procedural justice, justice as recognition, redistributive justice and cosmopolitan justice. With in addition 10 principles of justice. Energy poverty and stakeholder engagement are closely related to energy justice as well. Energy poverty, which has spiked in the Netherlands due to the COVID-19 crisis and war in Ukraine, is related to the distributional justice tenet. Energy poverty is defined as people who either have high energy prices in combination with a low income or living in low-energetic homes, this is seen as a pressing issue. Stakeholder engagement is related to justice as recognition and procedural justice and aimed to enhance support for energy projects and include local knowledge in energy decision-making, specifically involving citizens is also called citizen participation. It is seen as a crucial part of (energy-related) decision-making. There are challenges in achieving equal distribution of energy benefits and burdens in the energy transition and properly involving stakeholders and citizens in the decision-making process. Another challenge is to recognize the needs of vulnerable groups.

Two different governance models were also presented, which were the rounds model and the multi-level governance. The rounds model can be used to analyse the processes, discussions and stakeholders around different decisions and the multi-level governance can analyse the communication streams leading to a decision and the interdependence between local, provincial and national (and supra-national) levels. Both models combined are helpful in assessing the decision-making process in complex systems, like the energy transition. They are both performed in the context of this thesis and the knowledge of this is used to understand the decision-making process.

These frameworks will be used in the thesis to explore the governance structure of the local and regional governmental bodies regarding the energy transition. The frameworks will be used to generate knowledge about the respective subjects and this knowledge will be used combined to answer the research question and contribute to the knowledge gap presented earlier, it can also be used to provide barriers and recommendations regarding the current processes, like governance and citizen participation.

4. Research Methods

To gain a more comprehensive overview of the core concepts used in this thesis, respectively energy justice, multi-level governance and regional energy strategy, a literature study is conducted. As a result, the knowledge gap and the research questions were identified. The goal of this chapter is to outline the research approach and methodologies utilized in this master thesis. It will discuss the objectives of the research, summarize the core concepts explored in chapter two and discuss the methods of the data analysis. This chapter will contribute to answering all sub-questions.

4.1 Case-study Selection

In chapter two the current governance structure of the Dutch energy transition was explored. The Netherlands have a unique approach to dealing with the energy transition, the regional governance is not seen that often. Understanding this fairly new phenomenon could generate insights for other parts of the world where this is not yet implemented. However, this thesis focuses on only one region in the Netherlands, which is the Rotterdam- The Hague area.

The method of choice is doing a single-case study, as the region has some unique properties such as its size and differences in local governments. Furthermore, when diving into a single case it is easier to delve deeper into the details and comprehensively understand the issues in the case.

There are several factors that led to the choice to investigate this region further with a lens of energy justice. The first is that this region has not been subjected to research like this, which is an important area of study. This region has indicators of citizens experiencing injustices, as energy poverty often occurs in cities and peripheral regions, such as Rotterdam and The Hague (TNO, 2023). The indication that there are possible energy injustices provides importance in researching this topic in this region. Additionally, this region is relatively large and diverse in comparison to other appointed regions, consisting of 21 municipalities with both rural and densely populated areas. Due to these characteristics, there are a lot of stakeholders involved and understanding these power dynamics is therefore an interesting subject of study. For these reasons, this master's thesis focuses on exploring the energy transition and associated decision-making processes in combination with energy justice in the Rotterdam- The Hague area, aiming to assess and address potential injustices felt by citizens.

4.2 Methods: Literature Review and Qualitative Methods

4.2.1 Literature Review

The literature review is a fundamental method in most aspects of this master's thesis and the process of addressing the research questions. The methods serve different purposes throughout the thesis but are in general crucial for gathering information on the various topics explored in this thesis. A literature review particulate useful when the objective is to provide an overview of specific issues (Snyder, 2019). In Chapter 2, a semi-systematic literature review was already conducted, generating background knowledge on the topics further explored in this thesis and defining the research gap, which is a key objective of conducting a literature review (Parajuli, 2020). A comprehensive literature review is essential for conducting thorough research, as it allows the researcher to understand the existing body of research (Boote & Beile, 2005).

In Appendix A are the different articles used in the literature review of chapter two presented. Relevant articles were found using the research database Scopus in combination with Boolean searches of different relevant keywords. The exact boolean searches are also presented in Appendix A, the keywords used were "energy justice", "energy transition", "regional", "energy poverty", "regional energy strategy", "regional energy transition", "The Netherlands" and "Dutch". Some articles are found by snowballing, which means that they were added based on the references of other papers. In total, there were 26 articles selected to be added to the literature review. These were selected on their relevance to the subject investigated in this thesis and if the conclusion gave interesting insights which could be used in this thesis as well.

This master's thesis incorporates multiple types of literature reviews to achieve several objectives. Firstly, they aim to develop a comprehensive understanding of the core concepts used in the thesis, primarily covered in Chapter 2. Secondly, these methods facilitate an understanding of how other employed methods function. Additionally, the literature reviews contribute to the formulation of questions used in the interviews. Finally, the literature review method will be utilized to identify and validate potential solutions to the challenges the RES may face, which will be identified throughout the thesis. In summary, these methods are essential for comprehending the foundational concepts and are utilized throughout the entire research process.

4.2.2 Media Analysis

In addition to the literature review, the method of performing a media analysis was added to provide an overview of different perspectives or opinions on the current process of the RES and the state of the energy transition, revealing potential social unrest. Media analysis is an appropriate approach for this purpose, as the media often acts as an intermediary for public opinions. Statham and Tumber (2013) suggest that news analysis can serve as an indicator of the "political climate," aiding the interpretation of public opinion. Van Exel and De Graaf (2005) also state that these sources offer a wide range of perspectives from stakeholders such as politicians, organisations, professionals and citizens. Thus, a media analysis will provide insight into how citizens are currently experiencing the energy transition and serve as a foundation for further research. Desk research involves gathering data on the subjects discussed in the thesis, similar to a literature review. However, the sources for this research

are often non-academic, consisting mostly of summaries found on various websites. This method is particularly relevant when studying organizations and decision-making processes.

The media analysis was performed as follows. The databases used to find articles were AD, which is a newspaper which has also local newspapers under its control as well and Google News, which searches the whole database of news and different newspapers. The keywords used were in Dutch, as the media analysis consisted of Dutch newspapers, but are translated to “Energy transition”, “Energy poverty”, “citizen participation”, “participation”, “energy inequality”, “protest”, “The Hague”, “wind energy”, “wind turbines”, “conflict and some were added due to snowballing or encountered during the duration of the thesis. The articles were selected on the location where the article was written and their relevance. The articles selected are all written in the Rotterdam- The Hague area or neighbouring regions like the “Drechtsteden”. In the end, 36 news articles published in the last 6 years, were selected to be added to the media analysis and the summaries and exact boolean searches are to be found in Appendix B.

4.3 Semi-structured Interviews

The literature review conducted in this research served as valuable sources of background information for the core concepts which are researched and be applied throughout the remainder of the study. However, while the literature reviews provide a broad understanding of the concepts, they do not offer the in-depth knowledge required to address the sub- and main research questions. To attain this level of depth, conducting (in-depth) expert interviews is necessary. This method has proven to be particularly effective in addressing complex decision-making problems, as highlighted by Von Soest (2022), such as the energy transition within the RES Rotterdam-The Hague. The interviews were used as the core of this thesis, contributing significantly to answering the research questions.

The interviews involved two distinct groups, with the selection process outlined in section 4.3.1. The first group will consist of stakeholders who have direct involvement in the RES Rotterdam-The Hague, as mentioned in Chapter 2.1.2. These stakeholders possess comprehensive knowledge of the decision-making process, power dynamics, and governance structures within both the RES and their respective governmental bodies (municipality, province, or waterboard). Additionally, they possess expertise in current policies and perspectives related to energy justice, energy poverty, and citizen participation in both domains. To obtain this knowledge, a dynamic interview protocol will be developed and utilized. This protocol will be based on the questions that arose during the desk and literature reviews conducted in this thesis. It will be dynamic in nature, meaning that if a question receives similar responses from participants multiple times, the question will be modified or replaced to generate a more comprehensive and diverse overview of their knowledge on the subject. By employing this protocol, all aspects of the research sub-questions can be addressed, and consensus among multiple stakeholders can be identified as a collective response.

In addition to the stakeholder interviews, interviews will also be conducted with citizen representatives to gain insights into their perspectives on the energy transition and to explore any experiences of energy injustices they may have encountered. These interviews will involve a different set of questions compared to those posed to RES stakeholders, which are presented in Appendix C. The interviews will adopt an open-ended approach, allowing participants to freely express their thoughts and perceptions. This methodology enables the researcher to acquire contextual information that facilitates more insightful responses (Doody & Noonan, 2013).

There is a difference between the protocol of the interviews with stakeholders and the interviews with citizen representatives. This is due to the fact that both groups have different knowledge about different topics. The stakeholders have vast knowledge about the decision-making in the RES and the local governments, which is valuable to understand this process. Furthermore, they know which measures are implemented and if they have an effect from their perspective. In contrast, the citizen representatives have extensive knowledge of the challenges and needs of the citizens regarding the energy transition and know how the measures are playing out. Utilising different lines of questioning with both groups ensures to capture both knowledge and makes sure that the data covers a broad perspective on these issues.

To maximize the value of both types of interviews, they will be recorded and transcribed. Data management strategies will be implemented to ensure data integrity and confidentiality of participants' personal information. The transcriptions (and recordings) will be analyzed to derive meaningful insights. Coding, a widely used technique in qualitative research, will be employed to systematically organize and categorize the interview data. This process facilitates the identification of patterns, themes, and significant findings. Coding will be specifically utilized to categorize participants' statements according to the energy justice tenets outlined in Chapter 3. Additionally, coding will ensure comprehensive utilization of all available data, leading to the formulation of a comprehensive answer to the research questions. The strategy of coding is elaborated on in 4.3.3.

4.3.1 Selection of Participants

The selection of participants for the interviews is of crucial importance to the research, as their answers will contribute to filling the knowledge gap. It is therefore essential to carefully and strategically select the participants. This section will elaborate on the selection strategy and the methods employed to reach them. The thesis involves the participation of two distinct groups, respectively the stakeholders of the RES and citizen representatives in this region.

The first group of targeted participants consists of stakeholders involved in the RES, including employees from municipalities, provinces, and other relevant entities. The objective is to interview stakeholders who belong to the groups described earlier in this thesis, as well as civil servants engaged in the areas of energy poverty, citizen participation, or energy justice within the local government. These individuals possess valuable knowledge regarding the decision-making process and power dynamics within both the RES and the local government, which aligns with the goal of this thesis. To engage with these participants, social media platforms such as LinkedIn are utilized. Additionally, a desk research approach

is employed to explore the websites of relevant parties in order to identify additional potential participants. Snowball sampling is employed as a strategy to expand the participant pool and reach stakeholders who may be challenging to access within the RES. Snowball sampling refers to the process of obtaining referrals from existing participants who believe that other individuals can contribute valuable insights to the research.

The second group of participants in this study comprises citizen groups who are susceptible to energy injustices, including those experiencing energy poverty and other marginalized groups, predominantly concentrated in large municipalities (TNO, 2023). However, it is recognized that reaching these groups is challenging, and even if reached, it can be difficult to involve them in research of this nature (due to e.g. time constraints). Hence, the chosen approach is to conduct interviews with individuals or organizations closely connected to these groups, who possess a deep understanding of their challenges and struggles related to the energy transition. Examples of such entities include the district councils of Rotterdam and Den Haag, as well as social organisations like Dock and Schuldhulp maatjes, actively engaged in addressing these issues. To target these individuals, a combination of snowball sampling and the utilization of relevant organization websites are used. Snowball sampling serves as a means to expand the participant pool by obtaining referrals from initial contacts, while the websites of these organizations provide a valuable source of potential participants.

The participants and their functions are listed in Appendix E. The initial interview protocols for the stakeholders are found in Appendix C and for the citizen representatives they are found in Appendix D. About 15 interviews were held with civil servants and decision-makers involved in the decision-making process and 4 with citizen representatives. In addition, three civil servants have provided information in the form of a question list via the mail, these are not incorporated in the analysis but served as additional information in the creation of the interview protocols. The variety of the different stakeholders was quite big, as there were only two occasions that interviews were held with people of the same organisation, meaning there were at least 11 different organisations and roles involved. One interview was together with both a decision-maker and a civil servant of one local government, which gave the opportunity to understand if there were different views on certain subjects. The duration of the interviews was in general a bit more than an hour with the decision-makers and just short of an hour with the participants. Often starting with a general introduction, going into the decision-making process, into citizen participation moving on naar distributional justice and at the end some questions about interesting subjects that came up during the interviews. Most interviews were conducted online and a few were on the location of the participants

4.3.2 Supportive Tooling

The usage of appropriate tools plays a crucial role in facilitating the interview process, conducting literature reviews, and analyzing the gathered data. Using suitable tools enables a structured and efficient approach to both data collection and analysis, while also ensuring the preservation and protection of valuable data throughout the research process. The two tools utilized in this study are Microsoft Teams and Atlas.ti.

Atlas.ti is a software specifically designed to help researchers in the analysis and organization of qualitative data, including interviews and literature reviews. It allows for efficient coding of interviews, linking specific statements or excerpts to relevant concepts or themes. This coding process facilitates the identification of key findings and supports the overall analysis of the qualitative data.

To record and transcribe the interviews, preparing them for coding in Atlas.ti, the Microsoft Teams tool can be employed. This tool enables easy and automatic transcription, significantly enhancing the efficiency of the thesis, as manual transcription can be time-consuming. The generated transcriptions can then be imported into Atlas.ti for further analysis and coding purposes. When the meetings could not be recorded via teams, a dictaphone built into the iPhone was used to record the meeting. The MP3 files could then be transcribed by the built-in tool of the web version of Microsoft Word.

Artificial intelligence (AI) tool such as Grammarly and ChatGPT were used throughout the documentation phase of the research. They were used to detect spelling and grammar mistakes, the usage of such tools made sure that the report is understandable and written in correct english.

By incorporating tools such as Atlas.ti and the transcription feature in Microsoft Teams and Word, this master's thesis will benefit from a more streamlined and effective data collection and analysis process. These tools provide the necessary structure and functionality to organize, analyze, and code the collected data, ultimately contributing to the generation of valuable insights and findings.

4.3.3 Data Analysis and Coding Strategy

In the preceding sections, the software tool Atlas.ti was introduced, and coding was presented as a method for analyzing the collected data. Coding offers a structured approach to analysing the data gathered from media analysis and interviews.

While the interviews adhered to a specific structure, providing relatively consistent data, coding brought about additional insights by revisiting the transcripts, articles, and literature, yielding new perspectives. Thematic coding was employed across all the methods utilized in this research. Two main types of thematic coding were employed: open and closed. Closed thematic coding involves codes based on pre-existing themes, whereas open thematic coding allows codes to emerge from the data. This thesis adopted a combined approach, utilizing different codes aligned with the energy justice framework, which aligns with closed thematic coding. These codes were in line with the theoretical framework and research flow.

Open thematic coding aided in identifying other related recurring themes, such as specific measures and policies, and other central topics in this research. By systematically assigning codes and organizing them into themes, a robust understanding of the core concepts explored within this context was achieved. Atlas.ti served as the software facilitating systematic and easy coding, as well as interpretation, thereby enabling reliable data analysis. Additionally, Atlas.ti offered the option of AI coding, automatically assigning codes to different sentences and paragraphs. This was briefly employed to identify any missed themes or paragraphs during manual thematic coding.

In addition to coding for interview analysis, summarizing the interviews immediately after they took place was also employed. By summarizing the interviews immediately, all the noteworthy details were fresh in mind and could be documented. This added another layer of depth to the analysis.

4.3.4 Ethical Considerations

As highlighted in preceding sections, this research project involves interviewing multiple participants. In order to conduct these in the most ethical way, it is important to consider specific ethical considerations before, during, and after the interview process (Voltelen et al., 2018). It is for example of uttermost importance to keep the privacy and confidentiality of the participant in check.

To begin, each participant will be provided with an informed consent form and given time to review it together. This ensures that participants fully comprehend the research objectives and their rights throughout the process. As data will be generated and personal information will be stored, the implementation of a robust data management plan becomes crucial. To ensure the privacy and confidentiality of participants, their data will be stored using secure platforms such as SURFdrive and MSdrive, which are accessible only to a limited number of authorized personnel. These limited access control measures safeguard the data against unauthorized access by third parties. Moreover, the data obtained from the interviews will be handled anonymously in the thesis, thereby eliminating any potential links back to the participants. Once the research project concludes, all personal data will be promptly and securely destroyed. By adhering to these ethical guidelines, the integrity of the research is upheld, and the rights and data of the participants are effectively protected.

4.3.5 Data-treatment: Validity and Reliability

In each research study, it is important to consider the validity and reliability of the data acquired. This is especially crucial when utilising interview methods.

Validity is related to the accuracy and trustworthiness of the study, which could be compromised when conducting interviews and media analysis. To ensure validity, this research strives to collect information that accurately reflects the core concepts of the study. The data becomes more valid when more interviews are conducted and participants' statements are consistent, as demonstrated in the stakeholder interviews. Thus, this data is considered valid. The validity of the media analysis is further enhanced by the interviews with citizen representatives, as they corroborate each other.

The reliability of the data pertains to the consistency and replicability of the research methods. Documenting the various steps taken in the research promotes transparency and enables other researchers to replicate this study in the future. In this study, this has been achieved by meticulously detailing the methods and including the interview protocols in the appendices, to be available if needed. Additionally, a list of organizations and the roles of the interviewees is presented in the appendix, providing an added layer of transparency. To further enhance data reliability, the interviews are recorded and transcribed to maintain full transparency. Lastly, the coding method is also outlined in the thesis to once again bolster reliability.

By meticulously considering the validity and reliability of the data collection process, this research aims to produce trustworthy and robust findings concerning the decision-making process and energy justice in the Rotterdam-The Hague Region.

4.4 Research and Planning

In this section of the Methods chapter, a comprehensive overview of the research design and planning is provided. Chapters 2 and 3 have already presented the literature review and research methods, offering a broad understanding of the thesis content. In this part, an outline of the thesis planning and a summary of the research design is presented.

The thesis was done in four different phases. The first phase was characterized by information gathering and the exploration of the core concepts used further in the thesis. To do so, a study of relevant academic literature and other relevant sources were used to deepen the understanding of these topics, which were energy justice and governance on local and regional levels. This phase is characterized by reading and searching these sources.

In the second phase, the focus shifted from reading and understanding the subject to formulating questions to target the knowledge which was not in the literature to find. In this phase, the questions for the interviews were formulated. Furthermore, in this second phase the selection of participants was done, via the method stated earlier. Finding them via LinkedIn and e-mail. This was done carefully as the quality of the data depended on the interviews that were conducted.

The third phase centres itself around the data collection, this phase was in light of conducting the interviews. These interviews did take around an hour and were sometimes on location but mostly online. The interviews gave both new data but also insights into the protocol and changes to the interview protocol were made during this phase. In parallel to the interviews, the media analysis was conducted, which also provided some new questions to be asked to the participants and new insights into the general public opinion on the energy transition.

The final phase consisted of the analysis using the coding strategy explained earlier in this chapter. Furthermore, this phase was used to write down the thesis report and update all the chapters to have one storyline in the whole thesis report. These four phases together lead to addressing the research questions, starting the discussion and giving recommendations for

policy and future research. A short overview of the research is captured in the research-flow diagram, which can be found below.

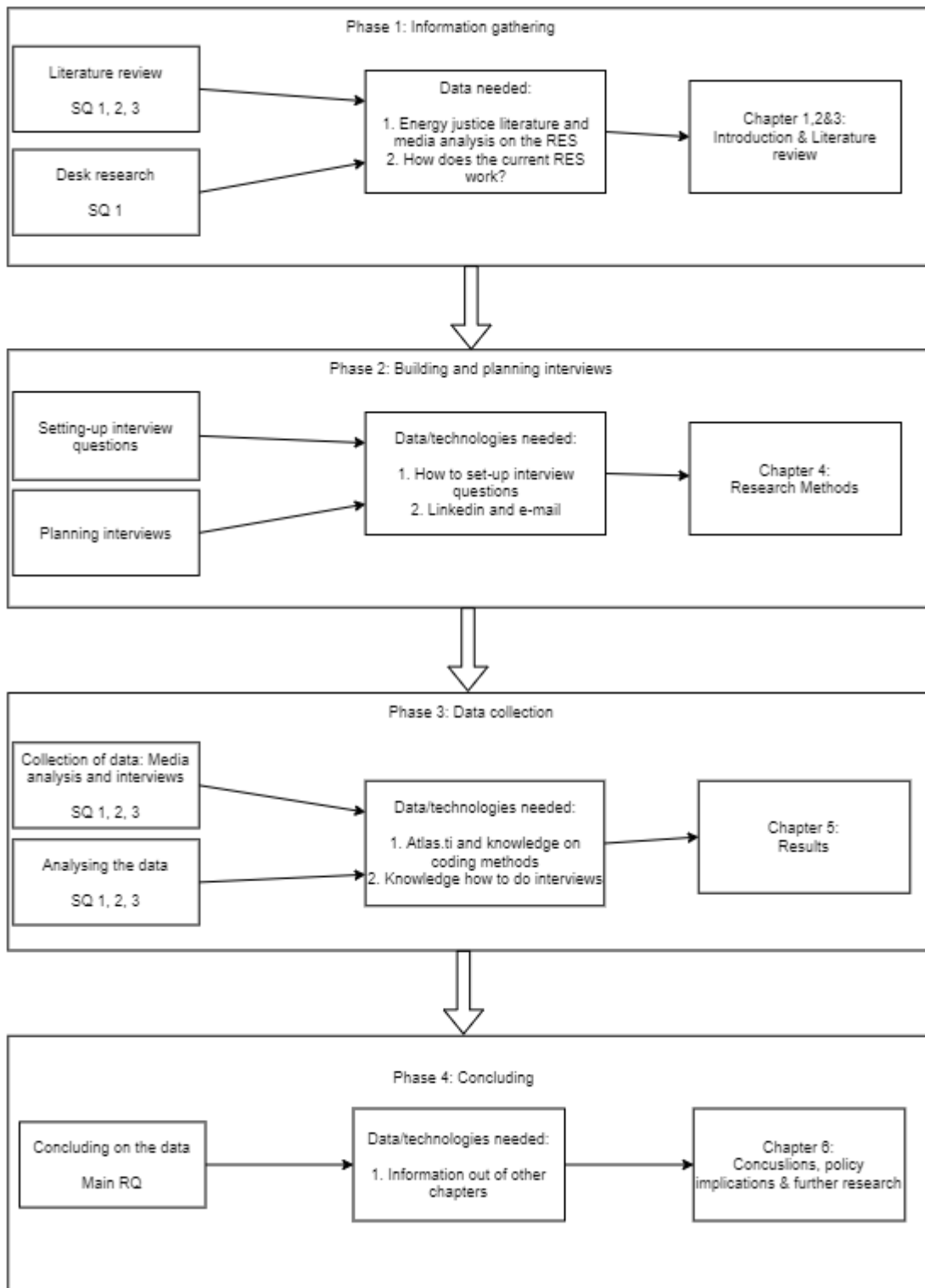


Figure 2: Research-flow diagram

4.5 Conclusion on the Methods

In conclusion, this master thesis aimed to explore the energy transition and associated decision-making processes in the Rotterdam-The Hague area, with a focus on energy justice. The research methods employed in this study included a literature review and qualitative methods such as media analysis and interviews. These methods were crucial in gathering information, addressing the research questions, and identifying potential solutions to challenges faced by the RES.

The literature review served as a fundamental method throughout the thesis, providing background knowledge on the core concepts of energy justice, governance models, and the governance of regional energy strategies. The method helped identify the research gap and formulate the research questions, to be explored in this thesis. The media analysis was employed to gain insights into different perspectives and opinions on the energy transition. Meanwhile, interviews with stakeholders and citizen representatives were conducted to gain in-depth knowledge and understanding of the decision-making process, their view on energy justice, and governance structures within the RES.

The selection of participants for the interviews included stakeholders with direct involvement in the RES and citizen representatives who knew more about the perspectives and needs of citizens regarding the energy transition. The use of supportive tools, such as Atlas.ti for coding and Microsoft Teams for recording and transcribing interviews, made efficient data collection and analysis possible.

When using participants out of the field, ethical considerations are important, also in this research this was the case. Ensuring the privacy and confidentiality of the participants and obtaining their informed consent to use the data.

Overall, this chapter gave an overview of the methods applied in this thesis and the methods of data analysis.

5. Results and Data-analysis

In the previous chapter, the methods which are being employed in this research are explained. The following section will delve into the results obtained through these methods and discuss the data obtained and the ways in which this is to be analyzed. This chapter will therefore uncover insights into the topics under investigation and give a comprehensive insight into these topics. This chapter will also include a comparison of the media analysis and the interviews. This chapter will contribute to answering all the subquestions.

5.1 Media Analysis

The media analysis serves as a valuable tool to gain insight into the current state of public opinion regarding the energy transition in the region. It aims to assess how citizens perceive energy transitions and identify any concerns related to energy justice, energy poverty, or citizen participation.

5.1.1 General Discussion of the Articles

The analyzed articles reveal a significant amount of media attention focused on the issue of energy poverty. More than half of the 36 articles emphasize the significance of this topic. Furthermore, a considerable number of articles explore the topic of citizen participation, discussing various forms of engagement. These articles examine the advantages and disadvantages of citizen participation, providing valuable insights into the effectiveness of these approaches. Two articles directly discuss the central themes of this thesis, namely energy justice and its broader scope, climate justice. It is important to acknowledge that the examined articles, whether explicitly or implicitly, touch upon fundamental principles or tenets within the energy justice framework. Few articles delve into the decision-making processes and discuss the role of local or regional governance in addressing energy-related challenges. Lastly, some articles investigate different policy measures proposed by the authors or implemented by the government, giving a nice overview of what is done in the field of energy justice already. In the subsequent section of this thesis, each of these topics will be thoroughly examined, incorporating the valuable insights provided by the analyzed articles.

5.1.2 Energy Poverty / Justice as Recognition

The frequency of mentions of the topic of energy poverty in the examined articles is a matter of great concern. The recent TNO report highlights that 600,000 Dutch citizens are living in energy poverty (Hoets, 2021; Provincie Zuid-Holland, 2023; Voermans, 2023), which is a trigger for addressing this topic. According to Movisie, although the issue has gained significantly more attention in recent years, it has been acknowledged since 1991 (Movisie, 2021). Individuals facing energy poverty are typically burdened with either high energy bills coupled with low income or reside in low-energy-quality dwellings classified as labels E - F and G (Fit, 2021; NOS, 2022; Movisie, 2021). Consequently, this group faces challenges in meeting their daily expenses due to high energy costs (Fit, 2021; Lammers, 2022; Potters, 2022). Furthermore, those living in energetically low-quality housing experience a moist living environment, which causes fungal growth and makes heating the house more challenging (Ketelaar, 2022). In an effort to alleviate their financial burden, energy-poor individuals resort to measures such as turning off the central heating, reducing warm showers, and limiting cooking (Fit, 2021; Ketelaar, 2022; Van der Krol, 2022; Movisie, 2021;

Voermans, 2023). Although these actions may provide temporary relief, they can also lead to significant health risks. According to Voermans (2023), cold and damp living conditions contribute to hospital admissions, particularly for individuals under the age of 18, with asthma-like symptoms and financial worries negatively impact mental health (Voermans, 2023; Den Haag FM, 2022). Escaping the cycle of debt is a challenge, showing the urgent need, to help citizens in overcoming energy poverty (Potters, 2022). The most affected groups include low-income families (often with children), single parents, stand-alone (Hoets, 2021), students (Knook, 2021), and most often these are tenants (Ketelaar, 2022). Most energy-poor citizens live in major cities such as Rotterdam and The Hague (Voermans, 2023).

As energy poverty has caught attention in recent years, various (policy) measures have been implemented to alleviate these issues, both on national and local levels. The primary measure implemented by the national government involves subsidies and a price ceiling aimed at compensating for high energy costs (Broeken, 2023). This initiative seeks to provide immediate relief to households experiencing energy poverty. According to Verhoeven (2023), this measure has prevented 400,000 households from falling into energy poverty. However, there are already calls suggesting that this subsidy is insufficient to lighten the overall burden (Potters, 2022; Movisie, 2021), such as badly insulated homes or the inability to invest in self-generation methods. Local initiatives have also emerged to combat energy poverty, including insulation programs, energy coaches, low-interest loans, and free energy-saving methods (like led lights and water-saving showerheads) (Blom et al., 2019; Potters, 2022; Voermans, 2023). While the subsidies distributed by local governments, facilitated by the national government (Bekkers, 2022), offer a temporary solution, a long-term remedy is still required. The municipality of Krimpen aan den IJssel has approved a new action plan to battle energy poverty with 2 million of their own budget and coming up with several plans to battle energy poverty in the long-term, such as solar panels, energy-saving measures and expanding support programs for low-income measures (Het Kontakt, 2023).

The articles highlight energy poverty as a significant challenge in the context of the energy transition, even leading to health-related consequences. The government and the public thus recognise this injustice. Several measures have been implemented to address these problems, but substantial efforts are still required. The current monetary measures initiated by the national government are temporary measures and lack long-term sustainability. Local initiatives tend to focus on long-term solutions but require significant resources and financial investment. Issues arise concerning the cooperation of housing corporations and private renters. Additionally, the measures taken are mostly the same across governments. Blom et al. (2019) suggest that pioneering approaches are necessary to address the complexities of energy poverty.

5.1.3 Distributional Justice

This tenet is one of the more discussed ones if we look at the media articles. The previous subsection is also linked to this tenet. However, this subsection is about the articles that are stating that the energy transition is causing the gap between rich and poor to widen. Notably, various articles highlight that the winners of this transition are the wealthier citizens who possess the financial capacity, but also the knowledge and network, to invest in sustainable

energy solutions (ANP, 2022, Kluskens & Van Der Wel, 2023; Verseput, 2022). These people can afford investments in renewable generation methods like solar power, which is making them less vulnerable to the fluctuating prices of fossil fuels. In contrast, less wealthy citizens lack this capability and remain vulnerable to the impacts of fossil fuel prices (Movisie, 2021). The relationship between the energy transition and rising gas prices, triggered by conflicts such as the war in Ukraine, is an example of the vulnerability of the less wealthy. While those who have invested in sustainable energy methods are sheltered from these price fluctuations, those who have not faced significant challenges, such as energy poverty. This situation raises concerns about the jeopardization of distributional justice. The widening gap between the wealthy and the less wealthy in society (Verseput, 2022) is an alarming trend resulting from these dynamics. Furthermore, this issue affects not only the less wealthy but also individuals who rent their homes from housing corporations or private landlords, which are currently not obliged to make their rental homes more sustainable in contrast to social housing corporations. Even if they possess the financial means, they often lack the mandate to invest in the energy transition (Köning, 2018). Harmsen (2022) adds that the compensation for high energy prices is handled by local governments, but the amount of compensation difference per location causes unequal distribution. The difference that is forming is related back to the lack of custom work of the national and local governments.

According to the findings of Kluskens & Van Der Wel (2023), this inequitable distribution of burdens and benefits in the energy transition is partly due to national policies that unintentionally favour the wealthy, allowing them to profit from subsidies and gain an advantage in the energy transition. Not only the subsidies are fuelling the unequal distribution, but also the rolling out of policies by local governments can fuel this, as the policies are not everywhere the same. For example, the municipalities have space to have their own take on policy measures and financial support can therefore vary from municipality to municipality. The unequal distribution of these burdens and benefits is a cause for concern. Therefore, it is crucial to understand this phenomenon, identify the aspects that these policies fail to incorporate, and develop policy options to mitigate these disparities, ensuring that policies are not blind to socio-economic inequalities.

5.1.4 Cosmopolitan Justice

Unintentionally, certain articles touch upon the concept of cosmopolitan justice. Two specific cases demonstrate instances where this justice has been compromised: the windmills in Rotterdam on the border with Geervliet (municipality of Nissewaard) and the windmill in The Hague on the border with Leidschendam. In the first case, the municipality of Rotterdam granted WindXL permission to construct windmills in the Botlek region. This was without consulting the municipality of Nissewaard, despite the windmills being situated on the border between the two municipalities. Consequently, this decision negatively affected numerous residents of the border town called Geervliet. The citizens and municipality of Nissewaard are outraged (Teitsma, 2017) due to the projected issues of shading, visual pollution, and noise pollution associated with the windmills. While the municipality of Rotterdam agreed to compensate the affected parties to address the damages (restorative justice), the citizens think this is insufficient. Additionally, the municipality established an environmental fund to mitigate the damages, but a group of citizens still needs to determine how to utilize these funds (Teitsma, 2019).

In the second case, the windmill located on the A4 highway provoked anger among the residents of Leidschendam. As a result of this public outrage, the municipality of The Hague was compelled to cancel the project (Omroep West, 2017), incurring financial losses.

The lessons learned from these cases are clear. Firstly, it is essential to consult with neighbouring municipalities when planning windmill construction in border areas. This can also be facilitated through the RES. Furthermore, establishing public support among citizens is crucial prior to embarking on such projects. When calls for justice arise, it is crucial to acknowledge these concerns and take steps to rectify any injustices committed.

5.1.5 Procedural Justice

This is the tenet that assesses the decision-making processes within the government (Heffron et al, 2021). Multiple layers of government are collaborating to coordinate the energy transition, but the decision-making procedures are not always transparent or clearly defined. As highlighted by De Bruijn et al., 2023 there is a perceived lack of future vision, initiative, and leadership within the government, leading to a sluggish energy transition and argue that a private entity should assume the role of coordinating the transition, emphasizing that it is not solely a technical challenge but primarily a societal one. Recognizing the magnitude of changes citizens will experience, there is a growing call in the media for citizen representation in energy decision-making processes, providing them with a platform to voice their opinions (Van der Velden, 2019; Broeken, 2023; De Wilde, 2021; Nwosu, 2022; Provincie Zuid-Holland, n.d.).

Enabling citizen participation in decision-making is mutually beneficial for both the government and citizens. It empowers citizens to shape the future and ensures their concerns and preferences are considered, while the government can generate support for its plans (Movisie, 2021; Van Der Velden, 2019; Ekker, 2020; Nwosu, 2022). This participatory approach can be implemented at both the local and regional levels, as exemplified by initiatives in The Hague (Omroep West, 2017; Bral, 2023; De Wilde, 2021) and the Regional Energy Strategies (RES) (Van Rijsingen, 2021). There are already forms of participation implemented. However, there are flaws in the current processes. Citizens are often engaged too late in decision-making (Van Rijsingen, 2021), and transparency regarding the utilization of citizen input is lacking, causing feelings of discontent when citizens perceive their voices as unheard (Bral, 2023). Hofstede & Van Bree (2023) give an example of the municipality of The Hague and state that although the municipality is involving citizens in decision-making, their input is not seen back in the decisions made, causing frustration and confusion.

Two articles propose the establishment of citizens' councils, aiming to involve citizens at an early stage and assign them responsibilities in decision-making (Van Rijsingen, 2021; & De Wilde, 2021). The media attention on the fundamental decision-making processes at the national and local government levels, as well as within the RES, is relatively limited. However, some criticism has been raised regarding the information provided by certain local governments within the RATHER (Ekker, 2020). While there is room for improvement in the current mechanisms of citizen involvement, media sources emphasize the importance of granting citizens a meaningful position in the decision-making process. Given the significant impact of the energy transition on citizens' daily lives, such inclusion not only helps generate support for the plans but also stimulates local initiatives (Provincie Zuid-Holland, n.d.),

speeding up the energy transition, which is also important. Vlaardingen (2023) wrote about the building of a wind turbine in collaboration with an energy collective, which created support for such a project. This article emphasises collaboration with citizens and supporting local energy initiatives is important to reaching procedural justice.

5.1.6 General Conclusion

In this chapter, a media analysis was conducted to gain insights into public opinion on the energy transition, with a specific focus on energy justice and energy poverty. The analysis of 35 articles gave new insights and raised questions to be asked in further interviews.

The first thing raised in the articles is the rise of energy poverty, which is a concern for citizens, public options and the government in all layers. The articles highlighted the challenges faced by individuals burdened with high energy costs and low income or living in low-quality housing. Mostly stand-alone (parents), students and other vulnerable groups (in rental homes) are experiencing energy poverty. Both affecting physical and mental health, it is therefore much needed to have measures to mitigate energy poverty. While there are measures taken, such as a price cap and local initiative, there is a need for long-term solutions. The current measures are mostly monetary and lack structural financial support.

Another concern raised by the articles is the distribution of the burdens and benefits of the energy transition and subsidies, benefitting the wealthier citizens and leaving the poorer citizens worse off. This is due to the fact that the poorer citizens do not possess the knowledge and the financial- and mental capacity to take part in the energy transitions. National policies, such as the subsidies for self-generation, are amplifying this because wealthier people can invest in the energy transitions, leaving them less vulnerable to fossil fuel prices. Therefore, widening the gap between the rich and poor. Furthermore, due to the nature of the national government letting the local governments handle the distribution of money, some municipalities give more support to the energy poor than others, leaving distributional justice in question.

The articles also touched upon the cosmopolitan and procedural justice tenets as well. The construction of windmills on the borders of municipalities outrages the citizens on the other side, as was seen in the cases of Nissewaard and Leidschendam. There is a need for consultation and public support in such cases. Not only in these cases is participation a must, according to the media, but in the energy transition, it is necessary. There is a call for more citizens' representation in energy decision-making. There are several initiatives being implemented, and there are challenges to overcome, such as transparency and the incorporation of input from the citizens. To gain support for their plans regarding the energy transition, the municipalities should include the citizens more, in decision-making but also financially via for example local ownership.

In the table below, the main opinions or concerns about the energy transition and which tenet is related to this concern. It should be noted that the media is not against an energy transition, but reveal some problems with how it is going currently.

Main concern	Energy justice Tenet	Description
Affordability	Distributional Justice	One of the main concerns found in the media analysis, is the affordability of the energy transition. Articles suggest that self-generation methods and technologies such as heat pumps are currently too expensive and could not be mandated by the government, mainly because citizens could not afford this. Financial support from the government is therefore needed, as a speedy energy transition is necessary.
Enlargeging Wealthgap	Distributional Justice	This concern is closely related to the previous one. Many articles discuss the observation that wealthier individuals tend to benefit more from the energy transition than those who are less affluent. This phenomenon is partly attributed to government policies that unintentionally favour the wealthier citizens and to the fact that financially wealthier individuals have the capacity to participate more effectively. So, this situation results in poorer individuals facing greater challenges, and articles express concerns about energy poverty. It is imperative to address energy poverty and ensure that the wealth gap does not widen further.
Lack of citizen participation	Justice as Recognition Procedural Justice	The articles discuss the lack of citizen participation regarding energy transition decision-making at both regional and local levels. These articles highlight that even when citizen participation exists, it is often unclear how the input is utilized, and there are concerns about the neglect of certain groups. Various solutions are proposed, including efforts to enhance citizen participation in the decision-making process by improving their involvement.
Not In My Back Yard	Cosmopolitan justice	Windmills, although deemed necessary, are often cause for protest or social unrest. This is also true in the Rotterdam- The Hague area. One article suggested that NIMBY could be negated by financial participation and the acceptance of windmills increase when doing so.
Government lacks vision and adequate reaction	-	A few articles discuss the fact that the government lacks the vision and data to lead an effective energy transition. They argue that the energy transition is going too slow and policies are taking too long to develop due to the hesitance of governments.

Table 1: Concerns on energy transition found in media analysis

5.2 Results of the Interviews

In the pursuit of answering the research questions, several interviews have been done with stakeholders and citizen representatives within the energy region of Rotterdam- The Hague. These participants have been asked questions related to this field, which are to be found in Appendix A & B. This subchapter will discuss the answers and statements to the questions presented to the participants. This will be done per subjects or tenets of the energy justice framework, also incorporating the principles.

5.2.1 Decision-making Process Regionally and Locally

The Energy Region of Rotterdam-The Hague is a total of 21 municipalities, 1 province, 4 waterboards, and various private entities combined. These entities are represented by dedicated members within different groups of the RES organization. Within each municipality, there are civil servants assigned to the energy transition, with one specific colleague responsible for the ANE of the RES. This group facilitates meetings for the BNE and ensures the distribution of knowledge to RES participants. The BNE, consisting of key decision-makers such as the aldermen from participating municipalities, receives advice from both the ANE and the RES Stakeholder Platform, which comprises representatives from private companies and energy corporations. Decisions regarding the RES are made within this group. However, it is acknowledged by all participants that these decisions are not legally binding and must go through the city council for final approval. The process of adopting the RES 1.0 document serves as an example, demonstrating the extensive time taken as each city council proposed changes and expressed their opinions on this document. Nonetheless, once the document successfully passed through all city councils, it became binding according to some participants. It should be noted that political shifts occurred after the city council elections. Nearly all participants acknowledged that these shifts influenced the energy policy, although no municipality withdrew from the RES 1.0 document.

During the interviews, concerns were raised by some participants regarding the democratic legitimacy of the RES. They pointed out that aldermen are not elected by citizens directly but rather by the parties within the coalition in the city council, which does not necessarily align with the citizens' choices. However, some participants argued that the aldermen possess a certain degree of mandate, allowing decisions to be made based on this authority. Furthermore, participants highlighted the variations in how municipalities engage in the RES process. For instance, one municipality insisted that all matters discussed within the RES must also be presented to the city council. Friction also arises due to the RES's organizational structure, with participants unanimously recognizing that the RES lacks a legal mandate and is no additional governmental body. Therefore, municipalities treat the RES differently, with some considering the decisions made within the RES as binding, while others do not. This difference can lead to conflicts and hinder overall collaboration. When asked whether the RES should be established as a separate governmental body, the answer was negative. They think that the energy transition should be done by the government and not by an independent private party as De Bruin et al. (2023) suggest.

Another issue highlighted by participants during the interviews was the collective-action problem. This theory suggests that coordinating collective actions within a collaboration is challenging, as individuals tend to prioritize their own interests rather than pursuing alternatives that benefit the collective. To illustrate this problem, one participant cited the example of a cross-border heating system, where a municipality could claim all the rights, leaving no heat available for neighbouring municipalities and benefiting solely on an individual level. Overcoming this problem is crucial for the RES.

Despite the flaws identified within the RES, participants acknowledged the benefits of regional collaboration among the municipalities involved. Many participants emphasized the value of the RES for cross-border energy projects, such as heating networks and the installation of wind parks. Furthermore, participants stressed that knowledge sharing should play a significant role in the RES's activities. According to participants, municipalities are currently reinventing the wheel individually, with limited communication and shared experiences among them. This hinders the progress of the energy transition and leads to wasted resources on failed policies.

Additionally, the interviewees noted that the Rotterdam-The Hague region is geographically extensive. While this size brings advantages in terms of increased knowledge and mutual support, it can also lead to disinterest. For instance, a municipality located in the northern part of the region may perceive developments in the southern part as having little to no impact on them. Therefore, neighbouring municipalities have started establishing separate collaborations, such as Voorne-Putten and Westland, which can lead to inefficiencies.

The participants of this study state that the governance of the energy transition involves multiple levels of government, each with different responsibilities. At the national level, the government sets the overarching framework for governance and has the financial leadership role by providing subsidies and other financial instruments to the other layers. According to one participant, the provinces have a less prominent role in the energy transition, primarily serving as advisors. There is a hierarchical relationship among the various governmental bodies. All participants emphasized that the governance of the energy transition is predominantly carried out at the local level. The national government provides financial support to local governments, which are then tasked with allocating these funds to their respective projects. However, the usage of specifieke uitkeringen (SPUKs) by the government has grown, which are funds earmarked for specific objectives. Participants perceive these SPUKs as a drawback for the energy transition, as they are seen as a form of control exerted by the national government. Simultaneously, there is a trend towards decentralization, wherein local governments are granted increased responsibilities. This creates confusion among participants. Moreover, participants expressed dissatisfaction with the lack of consistent financial support from the government to facilitate the energy transition and other projects. They highlight that the majority of funding, such as energy support, is provided on an incidental basis, resulting in uncertainty for local governments. In summary, although the national government holds significant influence over the energy transition, the local governmental bodies bear the primary responsibility. Participants argue for a more localized approach to governance and emphasize the necessity of long-term, structural financial support to facilitate the energy transition effectively.

In conclusion, there exists a level of confusion and disagreement among participants concerning the legitimacy of the RES. Furthermore, the presence of the collective-action problem makes it challenging to effectively lead collaboration among all municipalities. Moreover, the fact that most tasks are local responsibility further complicates regional coordination, particularly with regard to citizen participation. Establishing the RES as a new governmental entity is unfeasible due to the fact that local governments would give up power, which they do not want to like to do. It is worth noting that although there are four waterboards within the RES, only two actively participate, as they are often involved in multiple RES initiatives and lack the capacity to engage in all of them. The analysis has also shown that financing of local governments is often incidental, while structural finances are needed. The increased usage of SPUK's by the national government limits the manoeuvring space of local governments and hinders mitigating energy injustices and slows down the energy transition. Nonetheless, the RES has proven its usefulness in coordinating cross-border energy projects. Furthermore, facilitating knowledge-sharing sessions is crucial to prevent municipalities from wasting resources on policies that have already been attempted elsewhere. These findings pertain specifically to the Rotterdam-The Hague area. Therefore, for this RES, it may be more beneficial to reorganize the structure and prioritize knowledge sharing over decision-making, given the region's size.

5.2.2 Distributional Justice

In all municipalities where interviews have been conducted, energy poverty is seen as a significant issue. The participants in the study generally share a common understanding of the definition of energy poverty, which aligns with the energy poverty report published by TNO. This report serves as a guideline for local governments dealing with energy poverty. The participants have observed increased publicity on the subject in recent years, with a surge in energy poverty following the war in Ukraine. However, the interviewees indicate that this problem is more prevalent in large cities or cities with a significant presence of social housing and private rentals. Wealthier and smaller municipalities tend to experience lower levels of energy poverty compared to larger municipalities such as Rotterdam and The Hague. While all participants acknowledge the importance of mitigating energy poverty, they recognize the challenges involved in doing so.

The national government has shown increasing awareness of the issue and provides financial support to those in need through measures such as energietoelag (energy allowance) and a price cap on energy. However, addressing energy poverty on a long-term basis remains a struggle. As discussed earlier in the decision-making process section, the financial support provided by the government for energy poverty is often incidental and lacks a structural approach. According to participants, this represents a flaw in the system as energy poverty cannot be eliminated through one or two instances of financial assistance. Some participants argue that the national government focuses primarily on short-term relief rather than long-term mitigation of the problem. Moreover, participants note that it is challenging for energy-poor individuals to stay updated on the latest financial support and that the application processes are often difficult for them to understand, thereby hindering effective outreach to those in need. Two participants further highlight that the one-time payment of financial support is problematic. Some energy-poor individuals may feel overwhelmed by the lump sum or allocate it to purposes other than energy-related expenses, exacerbating their difficulties. Another flaw mentioned by participants is the

disregard for additional fees paid to landlords, which are not considered in the calculation of energy support, leading to some energy-poor individuals being deemed ineligible.

One mitigation method that has been implemented and is considered helpful by some participants as a long-term solution is insulation programs. TNO has provided valuable insights into neighbourhoods likely experiencing energy poverty, allowing municipalities to deploy energy coaches and fixers who assist residents in installing cost-effective insulation methods such as LED lights and weatherstrips. These interventions help reduce household energy costs. Energy coaches also provide energy-saving tips and advice tailored to each household's behaviour. Some municipalities have established dedicated locations where people can obtain free LED lights, information, and advice. However, implementing these mitigation methods requires significant capacity and personnel as they involve customized work. Participants hold differing opinions regarding the effectiveness of customized interventions, with some emphasizing the necessity of tailored approaches and others advocating for scalability. Two municipalities are currently piloting voucher systems, enabling people to purchase insulation materials themselves if they cannot afford them. However, this approach requires effective distribution of information and may not always reach the individuals who need it the most. Besides vouchers, which can be seen as "free money", there is another measure that can be taken to make homes more sustainable and these are interest-free loans for the sustainable development of your home. This can help people who are not able to invest before, do so. While insulation- and loan programs appear to offer a long-term solution to energy poverty, there are still barriers to overcome.

A broader challenge in energy poverty policy is the difficulty of reaching and engaging the affected population. Firstly, reaching out to these individuals is challenging due to their limited involvement in the energy transition and their lack of mental capacity to engage in such matters. Participants note a lack of awareness among energy-poor individuals regarding available measures to mitigate energy poverty. Additionally, certain groups, such as non-Dutch speakers or individuals with distrust towards the government, prove particularly difficult to reach with these measures. Furthermore, private renters pose a challenge in the context of the energy transition, as they may be reluctant or unable to make their rental properties more sustainable, despite the renters themselves desiring such improvements. Another challenge to reaching these people is digital illiteracy, according to an Alderman of a medium-sized municipality. They don't look at the Facebook page or website and are therefore also hard to reach. Participants state that they have several things to engage the public, for example by being present in the neighbourhoods, through social media, websites, local newspapers, and flyers. But also mouth to mouth is a valuable source of information, according to participants (An Alderman of a medium-sized municipality; a member of the city council of a medium-sized municipality).

Due to the local governance of the energy transition and the responsibility assigned to local governments in addressing energy poverty, variations exist among these entities regarding the mitigation and prevention of energy poverty, as noted by an Alderman from a small-sized municipality. Such variations can potentially lead to distributional injustices between different local governments. However, as all local governments are collaborating on this issue, the potential impact of these differences may be mitigated anyways.

In order to promote distributional justice, the national government has written down in the climate accord that each energy project should have 50% local ownership (Rijksoverheid, 2019). From the interviews conducted, it became evident that while some municipalities are actively striving to achieve this target, others were unaware of this requirement. This discrepancy can contribute to additional local distributional injustices.

When examining whether the energy transition widens the gap between the rich and the poor, all participants agree that this is indeed the case, which is a cause for concern. This development can be attributed to two primary factors. Firstly, individuals who possess some savings and can afford to invest in making their homes more sustainable can reap the benefits of energy production or reduction resulting from their investments. Conversely, energy-poor individuals are unable to afford such measures and are therefore unable to benefit from these opportunities. Most participants view the subsidies provided by the national government as a catalyst for this widening gap between the rich and the poor. It is crucial, according to the participants, to address and mitigate this issue as well.

Out of the interviews it is understood that there are different instances of distributional justice. The participant highlights the significant presence of energy poverty and that this is cause for concern. While there has been increased awareness of energy poverty in recent years, its prevalence is observed to be more pronounced in large cities and areas with a higher concentration of social housing and private rentals. In contrast, smaller and wealthier municipalities tend to experience lower levels of energy poverty. The groups are mostly people who are often at home, large families, renters and all living in low-quality homes (an employee of a societal organisation). The national government has given more attention to this problem and has implemented financial support measures for these groups, in the form of a price ceiling and energy allowance. However, addressing energy poverty on a long-term basis remains a challenge. The current approach of incidental financial support, rather than establishing structural help, can be seen as a flaw. A more structural approach to energy poverty has been insulation programs. Targeting neighbourhoods at risk, municipalities are deploying energy coaches to assist citizens in implementing insulation methods for free and advising them on behavioural changes that can help lower the energy bill. However, the success of these programs requires significant resources and customization to individual households, posing scalability challenges. Some municipalities are exploring alternative approaches, such as voucher systems, to empower individuals to undertake their own insulation initiatives. However, the effectiveness of these methods depends on efficient information distribution. Reaching the right group with these measures is however a challenge. Limited involvement in the energy transition and low levels of awareness contribute to this. Specific subgroups, including non-Dutch speakers and those with a lack of trust in the government, are particularly difficult to reach. Private landlords also pose challenges, as they may be unable or unwilling to make their rental properties more sustainable, despite their tenant's desire to do so. Overcoming these obstacles requires tailored communication strategies, utilizing a variety of channels, engaging in face-to-face interactions and a general policy to improve the energetic quality of rental homes (such as the one implemented for social housing). The national government has recognized the importance of distributional justice by mandating 50% local ownership in energy projects. However, the lack of awareness among some municipalities about this requirement may contribute to further local distributional injustices. Overall, the energy transition is, according to the interviews, widening the gap between the poor and the rich. Subsidies are

exacerbating this by making the rich more able to invest in sustainability. It is crucial to address these issues and mitigate distributional justice issues.

5.2.3 Procedural Justice

The concept of procedural justice revolves around the extent of stakeholder participation in decision-making processes, as well as the transparency and opportunity for providing meaningful feedback. However, within the RES Rotterdam-The Hague region, citizen participation in decision-making is minimal or nonexistent. This was particularly true during the establishment of the initial RES 1.0 document, where no input from citizens was implemented, as stated by several Aldermen. The justification for this lack of citizen involvement was the perception that the RES was too abstract for citizens to engage with effectively, according to an Alderman from a medium-sized municipality. Furthermore, the involvement of the city council, elected by citizens, was considered indirect citizen participation, as affirmed by various Aldermen and civil servants. The RES platform, comprising private companies, energy cooperatives, and other involved parties, is a channel for providing input to the BNE. However, even this platform lacks citizen involvement. Additionally, a board member of a participating energy cooperative expressed disappointment, noting that the level of involvement in the RES platform had declined over time.

Transparency regarding RES decisions is also an area requiring improvement. Processes for ensuring transparency beyond the RES are primarily the responsibility of local authorities. An Alderman from a medium-sized municipality stated that decisions within RES 1.0 were made available to citizens for insight, and feedback on those decisions was encouraged. According to interviews conducted with civil servants from municipalities, waterboards, and the province, as well as Aldermen in the region, citizen participation is best implemented at the local level. Local governments possess the most comprehensive knowledge of their citizens and have the capacity to establish appropriate processes. Furthermore, local governments are engaged in tangible projects that directly impact citizens, fostering a sense of urgency among citizens to participate. In the region, all municipalities interviewed had some form of energy decision-making participation in place, encompassing various levels on the participation ladder introduced by Arnstein (1969). At the lowest level, information is disseminated through avenues such as public meetings, newspapers, and websites. In certain cases, citizens can provide feedback on proposed policies. However, issues primarily arise when windmill projects are involved, as they often face limited or no support from citizens, as reported by an Alderman from a medium-large municipality. Financial participation measures are sometimes employed to garner greater support, aligning with the 50% local ownership requirement. Some municipalities have advisory councils consisting of citizens who offer opinions on energy transition policies. For specific projects, such as heating networks, citizen participation is taken very seriously, with extensive discussions held with citizens in the affected neighbourhoods to collaboratively design the systems, as stated by a civil servant from a medium-sized municipality. Thus, the participants recognize the importance of citizen participation in generating support, and various methods of engagement are employed.

However, within the realm of citizen participation, flaws and learning opportunities also exist. Firstly, the level of citizen participation often pertains only to the "how" question, seeking input when projects are concrete rather than addressing the "what" question, which involves citizens in shaping the broader framework. An Alderman from a medium-sized municipality even suggested that citizen participation decreases as the topic becomes more abstract, although two energy cooperative members expressed interest in being involved. A civil servant from a medium-sized municipality emphasized the significance of representative citizen participation in energy projects, which remains challenging for local municipalities striving to engage all groups in the decision-making process. Notably, the individuals attending such events tend to be from the same well-educated, predominantly white, and elderly demographic, as stated by a civil servant from a medium-sized municipality. The transparency regarding the utilization of citizens' input is unclear, as the ultimate decision-making authority rests with the city council, according to an Alderman from a small municipality and a member of a city council from a medium-sized municipality. In some cases, the city council itself is seen as a form of citizen participation.

Although citizen participation is considered crucial in the decision-making process, its implementation varies across different levels. Generally, citizen participation is regarded as the responsibility of local governments rather than being conducted on a regional scale, even though decisions are being made at the regional level. These decisions are subject to city council deliberations, which are deemed indirect citizen participation. However, only a few municipalities have shared the RES plans with their citizens and actively sought input. While citizen participation is acknowledged as vital due to the support it can generate and the local knowledge it provides, achieving a well-rounded representation of society poses challenges and requires significant capacity. Not all groups are willing to participate, and some are difficult to reach. Numerous forms of citizen participation are being employed, with commonly cited examples including information nights, webinars, policy insights, and neighbourhood engagement. Nevertheless, current participation is primarily focused on concrete plans where citizens directly experience the consequences of decisions, such as windmills or heat networks. In contrast, citizens are rarely involved in the abstract aspects of the energy transition, particularly the "what" question. However, some participants, notably those from energy cooperatives, argue that processes should be in place to facilitate participation at this abstract level. Overall, while citizen participation exists, there is room for improvement in terms of procedural justice. Furthermore, the differing approaches to citizen participation among municipalities can be seen as an unjust disparity.

5.2.4 Justice as Recognition

The tenet justice of recognition looks at the acknowledgement of groups susceptible to energy injustices and the establishment of a framework to address these concerns. This aspect has already been discussed in the subsection on distributional justice. The groups affected by energy injustices are diverse, mirroring the varied nature of such injustices.

Firstly, energy poverty emerges as a prominent form of injustice. Typically, low-income households residing in energy-inefficient homes are affected by energy poverty, aligning with TNO's definition of the concept. Furthermore, individuals without employment or the elderly often fall into this category, as do those residing in substandard housing provided by private landlords or social housing. Additionally, larger families experience challenges related to energy injustices. Currently, there is no established procedure in place to address the concerns of these affected individuals. They are often difficult to reach, as previously mentioned, and may feel social stigma when approaching municipal authorities with their problems. Nonetheless, there are localized approaches, such as the utilization of energy coaches and fixers, aimed at identifying these groups and making use of local knowledge for the energy transition. However, most individuals facing energy injustices seek assistance from societal organizations due to their financial difficulties. Employees within these organizations possess valuable insights into the problems prevalent in their respective neighbourhoods. However, the municipalities have yet to engage with these individuals or seek their assistance, which could prove beneficial. Therefore, establishing a procedure to involve these organizations could be a promising step forward. In terms of procedural justice, energy cooperatives express a sense of being unheard in the energy decision-making process, as previously mentioned by a board member of an energy cooperative.

5.2.5 Cosmopolitan and Redistributive Justice

According to the participants of the interviews, cosmopolitan justice is rare within the Rotterdam- The Hague energy region. However, there are instances in The Hague (alderman of a small municipality) and Rotterdam (civil servant of a medium-sized municipality) where the presence of windmills has disrupted justice between bordering municipalities, leading to outrage among both local governments and citizens. Windmills often become focal points for cosmopolitan justice concerns, as they generate visual and noise pollution. The selection of locations for renewable energy projects within the RES region is frequently a subject of debate. To foster greater support, financial and citizen participation can be instrumental. Additionally, cross-border heating systems can also be a source of cosmopolitan injustice when a single local government claims exclusive rights, leaving no benefits for others. Fortunately, such cases of injustice are rare due to the close collaboration among local governments within the RES region.

Redistributive justice aims to rectify past injustices, and within the RES Rotterdam-The Hague, there have been instances of such injustices, such as subsidies for sustainable home development that have disproportionately benefited the rich over the poor. To mitigate these disparities, various measures have been implemented, including energy allowance, rent-free loans, and insulation programs specifically designed for these disadvantaged groups, as highlighted by several aldermen from municipalities of different sizes. However, it should be noted that these measures are not primarily intended for redistribution purposes, but rather serve as secondary considerations.

5.2.6 Other Interesting Insights

One intriguing insight that emerged during the interviews was the concept of financial scarcity (*financiële schaarste*). This phenomenon is characterized by a psychological shift in individuals when they encounter financial difficulties. These financial problems create a constant state of stress, leading individuals to avoid confronting their financial situation (Hilbert et al., 2022). This avoidance can exacerbate their financial problems. This concept has relevance to this thesis as individuals experiencing energy poverty are often found in a similar situation, as noted by an employee from a societal organization. These individuals tend to have a short-term focus on their finances and lack the mental capacity to consider broader societal issues, like the energy transition. This has implications for the measures implemented to alleviate energy poverty, as the government's one-time allowance provided a significant amount of money to these energy-poor individuals. Given their short-term vision, they could spend the money on a new couch or spend it elsewhere rather than paying their energy bills, thereby worsening their financial difficulties. Additionally, these individuals often do not participate in the decision-making process around the energy transition. Sometimes they even neglect to open their mail, resulting in missed opportunities for help. Engaging with these individuals can be challenging, but sharing information and establishing a presence in the neighbourhood could help, according to the participant's perspective. Societal organizations currently assist these individuals in a reactive manner rather than taking a proactive approach. Many individuals feel ashamed to seek help for their financial problems, despite the fact that seeking assistance could be a viable solution for them.

The energy transition is not only about the shift to a more sustainable energy source but also the reduction of energy consumption, including gas and electricity. As highlighted by the participants, a significant amount of energy is being wasted in low-quality, energetically inefficient homes. These homes often lack proper insulation and may have outdated features such as single-pane windows. Housing cooperatives, social housing providers, and private landlords are key stakeholders responsible for a considerable number of these homes. Therefore, engaging these groups in the energy transition is important. However, reaching out to private landlords poses a challenge as their primary focus is often maximizing profits rather than investing in sustainable improvements to their houses. Recently, there has been a policy development aimed at forcing social housing providers to invest in achieving a minimum C-label energy efficiency rating. Extending this requirement to private housing could be a valuable step forward in promoting energy efficiency across all housing sectors.

As previously discussed, there are various ways to engage citizens in the decision-making process. However, for municipalities, citizen participation also serves as a means to gain support for decisions, such as the implementation of renewable energy projects like windmills or solar roofs. It is often the case that citizens tend to support renewable energy projects in general but object to having them in their immediate surroundings called the "Not In My Backyard" (NIMBY) principle. To address these concerns, some aldermen and civil servants suggest using financial participation as a strategy to gain support. This approach allows residents living near the energy project to invest in it, thereby generating financial returns and personal benefits. However, it should be noted that this approach presents a challenge, as energy-poor individuals may not have the financial means to participate in such investments. Many civil servants and aldermen acknowledged this issue but lacked immediate solutions. To achieve the goals, municipalities are utilising financial participation

anyways. However, one board member of an energy cooperation shared an example of offering shares for as little as twenty-five euros for solar roof projects, aiming to increase accessibility for a broader range of citizens. However, it should be recognized that even this modest investment may not be feasible for the poorest citizens. In response, an alderman from a small municipality proposed the concept of a neighbourhood fund. This approach involves the municipality or private companies investing in energy projects and paying a portion of the profits to a neighbourhood fund. The fund could then finance local projects, generating support and creating a snowball effect for other renewable energy initiatives. Another solution suggested by an alderman from a medium-sized municipality was to establish quotas for investors, forcing a certain percentage of the energy generated by the project to flow back into the neighbourhood. This approach would benefit the community and generate support. Thus, there are ways to enhance support for renewable energy projects without widening the gap between the poor and the wealthy.

The implementation of the omgevingswet (Rijksoverheid, 2023) has been well-received by many aldermen. This policy aims to streamline spatial development regulations, facilitating the initiation of building projects. The implications of this policy change are also relevant to the energy transition. The policy places significant emphasis on citizen participation, requiring project owners to engage with neighbouring citizens for every building or development project that may impact them. As an example, an alderman from a small municipality stated that this requirement extends even to relatively minor undertakings such as constructing a dormer, where the project owner is expected to inform and seek input from their neighbours. This approach also applies to energy projects and has the potential to foster greater energy justice.

5.3 Comparison Results from Media Analysis and Interviews

Both the media analysis and the interviews conducted revealed that there are groups within society that experience energy injustices. Moreover, both indicated that local governments are actively engaged in several projects aimed at mitigating these injustices. However, the media analysis gave a more critical view, focusing on shortcomings, while the interviewees expressed confidence in the progress made while acknowledging the need for improvement. The interviews showed also that citizen participation only occurs in cases with a low level of abstraction, which contrasts with the media's call for citizens to have a say in designing their energy future.

Regarding distributional justice, both analyses reached the same conclusion: significant work remains to be done. Energy poverty poses a large challenge, particularly in large cities and peripheral areas of the Netherlands, and financial support alone is insufficient to address this issue. Implementation of insulation programs is necessary to assist alleviate energy poverty. The policies of the national government have contributed to an expanding wealth gap, which is acknowledged by both analyses and seen as problematic and requires attention. It is worth mentioning that one article suggested that regional governance of the energy transition is not ideal and proposed an independent organization outside the political sphere to oversee energy governance, which is an opinion that differs from the viewpoints of the interviewees.

Another difference between the media analysis and the interviews is that while the municipalities interviewed believe they have the knowledge and experience in the field of energy transition, the media analysis suggested a different perspective, stating that the local/regional governance is struggling with the energy transition. Additionally, the concept of energy justice was frequently employed in the media analysis, whereas many interview participants had not previously encountered the term and approached the topic based on an intuitive sense of equality.

Overall, both the media analysis and the interviews provided insights into the current state of energy justice in the energy region and proposed measures to address it. The media analysis offered a critical perspective on these measures, while the interviews delved deeper into policy developments and the thoughts behind them. The media analysis complemented the interview findings by highlighting areas for improvement and stimulating further discourse on energy justice among local governments.

5.4 Conclusion of the Results

In this section the analysis of both the interviews and the media review has been shown. This analysis is the core of the research project and is used to answer the research questions. The combination of both a media analysis and interviews has provided useful insights into the complexities and challenges of the energy transition in combination with energy justice. Also, it provided insights into the governance structure and efforts made by local governments to address these issues. The media analysis and the interviews with the citizen representatives gave also valuable insights into the perspectives and needs of citizens in this region. The combination of the methods gave a holistic picture of the issues faced.

The media analysis revealed significant concerns regarding energy poverty, which has become a pressing issue affecting citizens at all levels. It highlighted the hardships faced by those burdened with high energy costs and low income or living in low-quality housing. While some measures have been implemented to mitigate energy poverty, the analysis highlighted the need for more sustainable and structural solutions to tackle its root causes effectively.

Distributional justice emerged as another critical issue in both analyses, with disparities between wealthier citizens profiting from sustainable energy solutions and less wealthy individuals experiencing energy poverty. The widening wealth gap, partly influenced by national government policies, has raised concerns and calls for more just distribution of energy transition benefits and burdens.

The media analysis also highlighted the significance of procedural justice in the decision-making processes of the energy transition. Citizen participation was identified as crucial in garnering support and ensuring their concerns are heard. However, flaws in the current processes were highlighted, suggesting the need for more meaningful and transparent engagement to shape the energy transition effectively.

Additionally, the concept of cosmopolitan justice was touched upon in some articles, emphasizing the importance of considering neighbouring communities' perspectives in planning energy projects in border areas to avoid conflicts and injustices.

The interviews provided insights into the complexities of decision-making at regional and local levels. The lack of a binding legal mandate for the Regional Energy Strategy (RES) of Rotterdam- The Hague resulted in variations in the engagement of local governments, hindering effective collaboration in the RES. Despite these challenges, regional collaboration was recognized as essential for cross-border energy projects and knowledge sharing.

Energy poverty and its distributional impact were identified as major challenges in the interviews as well. Efforts to engage affected populations and address their unique needs are challenging due to limited awareness, digital illiteracy, language barriers, and distrust in the government. Tailored strategies and engagement with societal organizations were suggested to help the energy poor effectively. The interviews also touched upon to the role of financial scarcity in managing energy poverty and highlighted the importance of energy efficiency in housing, particularly private rentals. Encouraging financial participation and ensuring accessibility for all citizens, especially the energy-poor, were seen as crucial steps in achieving a just and sustainable energy transition.

The combination of media analysis and interviews provides an understanding of the energy transition's complexities and its impact on energy justice in the RES Rotterdam-The Hague region. It highlights the need for further improvements in procedural justice, distributional justice, and cosmopolitan justice to achieve a more equitable energy future. Collaboration among municipalities, energy cooperatives, private companies, and societal organizations is important to create an inclusive and fair transition for all citizens. By addressing these challenges and implementing effective policy measures, the region can move towards a more just and sustainable energy future.

As stated earlier, several policy measures are implemented in the region, knowingly or not, that enhanced the different tenets of the energy justice framework. In the table below, you'll find these policies summed up again with a small explanation, the tenet it enhances and which level of government implemented them as well as potential flaws. This table gives an overview of the results section.

Policy measure	Explanation	Energy justice tenet/issue	Level of government	Potential flaws
Energy Coaches/fixers	Energy coaches and fixers go to energy-poor families and advise them on behaviour changes, financial situation and install small insulation methods.	Energy poverty	Local	This measure relies on tailor-made work and volunteers, which makes this method not scaleable in the long term.
Insulation programs	Collectively buying insulation materials with the neighborhood can get a discount to economies of scale making it more affordable to insulate homes.	Energy poverty	Local	There still needs to be an investment in insulation methods, meaning that energy-poor and low-income can still not afford this.
Insulation vouchers	Giving vouchers to citizens to insulate their homes for free.	Energy poverty / distributional justice	Local	This cost a lot of resources.
Loans for self-generation or insulation	Low-interest loans for investment in both insulation measures and sustainable self-generation.	Energy poverty / Distributional justice	Local National	Some people do not want to loan money as they think it is too large of a risk
Energy allowance	One-time financial support for poorer people to mitigate their high energy bills.	Energy poverty / distributional justice	National	One-time financial support means that the less fortunate got 1300 euros at one time in their bank account and could have bought other things with it.
Price ceiling	This measure was for all people, making sure that the energy bill was not too expensive.	-	National	People who are in need did get the same as the ones who were not in need.
Involving citizens	<ul style="list-style-type: none"> - Information sharing: Sharing information about energy projects in the neighbourhood and measures. - Advisory council: Engagement of citizens via a council who can give their opinion on energy policy - Presence in the neighbourhood: Civil servants in the neighbourhood to have conversations with citizens to hear their thoughts as well. 	Procedural justice, justice as recognition	Local National Regional	<ul style="list-style-type: none"> - Possibility to not reach people and it costs a lot of capacity - Not all different groups are represented in such council, only those with interest in the energy transition. - Costs a lot of capacity and lack of transparency of what is done with the input
Supporting energy cooperations	Energy cooperations are collaborations with citizens who are interested in the energy transition and engage other citizens in their endeavours for cheap and sustainable energy.	Procedural justice, justice as recognition and distributional justice	Local	Local governments give up control to such energy corporations.

	Helping their fellow neighbourhood members in this endeavour is part of their journey and they could be helping the municipality with participation.			
Cross-border collaboration	Collaboration via the RES on energy projects.	Cosmopolitan justice	Regional	Can cause conflicts.
Financial participation	Financial participation lets citizens invest in energy projects and benefit from the profits. Also generating support for the energy project.	Procedural justice	Regional Local	Less wealthy people cannot invest in such projects, leaving the rich people more well-off.
Neighbourhood fund	Similar to financial participation only now before the project can start, the municipality sets up a fund where profits go into funding neighbourhood initiatives. Also generating support for the project	Distributional Justice Procedural justice	Local Regional	Might pose a barrier for private companies to invest in energy projects.
Knowledge-sharing	Municipalities come together in the RES meetings and share their projects and policies to foster innovation and not let the municipalities reinvent the wheel.	-	Regional	-

Table 2: Different policy measures applied currently

6. Discussion and Conclusion

This section entails a comprehensive examination of the master thesis, including an overview of the research methods utilized. Subsequently, the obtained data will be analyzed to address the primary and secondary research questions, leading to conclusive findings. Additionally, policy recommendations and avenues for future research will be provided and discussed, alongside a thorough exploration of the study's limitations. This chapter will focus on answering all research questions.

6.1 General Discussion and Conclusions on Research Questions

The primary objective of this research project was to examine how regional and local governments in the Rotterdam-The Hague region are addressing the energy transition, with a particular focus on the energy justice framework. With the implementation of the climate agreement by the national government, the responsibility for the energy transition was delegated to local governments, contributing to the rollout of the Regional Energy Strategy (RES) program. The RES program is a collaboration between various stakeholders, including municipalities, water boards, the provincial government, and private companies, and was founded to achieve the energy goals mandated by the national government.

The energy justice framework emphasizes the importance that every citizen should have access to sustainable and affordable energy and involves them in the decision-making process regarding their energy transition. As this framework should be used in policy-making discussions, according to Qian et al. (2022), this research project serves as a benchmark to assess the extent to which the current process aligns with the energy justice framework. Lessons learned from different municipalities within the region will be gathered, and recommendations for improvement will be formulated. To achieve these objectives, in-depth interviews were conducted with key decision-makers such as Aldermen and civil servants in the region.

In addition to assessing the current process, it is imperative to identify the specific groups that are experiencing energy injustices and assess the general opinion of citizens regarding the energy transition. By understanding their needs and challenges, targeted recommendations can be developed. To do this a media analysis is done and citizen representatives were also interviewed. The central research question guiding this study is:

“How do the local and regional governmental bodies deal with the energy transition in light of Energy justice and Energy poverty?”

In order to address the research question and achieve the research objectives, three subquestions have been formulated, some of which include additional deepening. These subquestions will be systematically addressed and answered individually. By examining each subquestion, valuable insights will be gained, facilitating the subsequent response to the main research question.

6.1.1 Conclusions on the Subquestions

In this subsection the subquestions are being answered and elaborated on.

SQ1: “How does the current energy decision-making process of the Rotterdam- The Hague energy strategy and its local governments work?”

SQ1a: “What are the challenges and barriers faced by local and regional governmental bodies in this area in addressing energy justice and energy poverty?”

SQ1b: “How do local and regional governmental bodies in this area engage with stakeholders?”

The first sub-question poses an immediate challenge due to the complex nature of the decision-making process and the blurred lines of responsibility within the Dutch governance structure. The Dutch governance structure consists of four primary decision-making entities: the European Union, the national government, the provinces, and the municipalities, in addition, there are waterboards. Each of these entities has specific responsibilities and operates at different abstraction levels of decision-making. In this thesis, the influence of the European Union is not extensively considered due to its high level of abstraction, primarily focusing on the overarching goal of achieving climate neutrality by 2050. The national government of the Netherlands has responsibility for major decisions at a high level of abstraction, shaping the scope of action for provinces and municipalities. Moreover, the national government can be perceived as the accountant of the bunch, providing financial support to other governing bodies and taxing the inhabitants. The province, operating at a lower level, is tasked with regional governance of the energy transition, economy, and mobility accessibility beyond municipal boundaries or entailing multiple municipalities. Additionally, provinces are responsible for overseeing the municipalities' finances and governance quality. Local government bodies, or municipalities, primarily have the responsibility for implementing the plans devised by the national and provincial governments, focusing on plan execution. The interviews reveal that the national government is increasingly decentralizing tasks, leading to municipalities assuming greater responsibilities. Another notable development is the growing allocation of Specific Grants (Specifieke Uitkeringen or SPUK's) by the national government, which exerts financial control over municipalities and restricts their manoeuvring space. Waterboards are accountable for water quality, agricultural water supply, and wastewater treatment. They also consume energy and explore energy opportunities related to water, thereby involving themselves in the energy transition.

Regarding the energy transition, it is primarily the local governments that have the responsibility for implementing the plans devised by the national and provincial governments. Additionally, the national government has established a collaborative program known as the Regional Energy Strategies (RES) to govern the energy transition. The RES facilitates collaboration among multiple municipalities, provinces, waterboards, and private companies, particularly for projects with cross-municipal scope. It is important to note, however, that the RES does not possess a legal mandate to make enforceable decisions, as commonly thought. According to these participants, the role of the RES should primarily focus on knowledge sharing among municipalities and coordination of cross-border projects.

The decision-making process within the complex landscape of various stakeholders involved in the energy transition, particularly with the introduction of the RES, can be challenging to understand. There is a common misconception that the RES possesses decision-making authority, which is not the case. This issue has also sparked debates among participants within the RES, as some perceive the RES plans as binding while others do not. Nevertheless, the actual decision-making process regarding the energy transition ultimately lies within the municipalities. Within the RES, meetings take place, and plans are formulated. These plans are then presented to the city council of each contributing municipality. The city council has the opportunity to provide feedback, ask questions, and offer input, initiating an iterative process between the municipality and the RES. This back-and-forth exchange continues until a consensus is reached among the city councils. This is the underlying structure of the RES 1.0 document. In the case of other energy projects, the aldermen hold a certain level of decision-making authority. They propose plans to the city council, which then votes on the proposals. It is important to note that the province has jurisdiction over the municipalities, and if the local governments fail to achieve their goals, the province can intervene and implement its own plans. Citizen participation in decision-making varies across municipalities, with some allowing input from citizens while others solely provide information. However, citizen participation is absent within the RES itself.

There are several instances of energy injustices which are felt by different groups of society. In the case of distributional justice, there is in this region and especially in the large cities, energy poverty. Furthermore, out of the analysis came that the rich are getting better off than the poor due to the energy transition. It can therefore be said that there are issues with the division of burdens and benefits in the region. There are also procedural justice issues in this region. Not every group is represented in the decision-making process and citizen participation is only done on concrete projects and not in the design of the energy transition. However, there are calls to do this. There were some instances of cosmopolitan justice issues regarding windmills. The barriers to addressing these broad and differ from tenet, the main barriers are:

1. *Limited (financial) resources:* As previously mentioned, the national government is the main governmental body funding municipalities. However, when it comes to effectively addressing energy injustices, there is a lack of structural support from the national government. While the government has provided occasional financial relief to the energy poor, these measures are temporary in nature. Municipalities require more sustainable and structured financial support to effectively assist this group. The method of financial allocation to municipalities is also changing, as the national government increasingly provides SPUKs, which can only be used for specific instances. This restricts the manoeuvring space of municipalities in addressing energy injustices. In addition to financial constraints, the lack of capacity in manpower within local governments poses another barrier. Engaging citizens in the energy transition, assisting energy-poor households, advising the city council, and organizing insulation programs and many more things, all demand significant manpower, which is scarce in most municipalities. Moreover, effective engagement strategies tailored to each community require customized approaches. Therefore, there is a need for increased capacity, additional financial resources, and greater manoeuvring space for local governments to effectively tackle energy injustices.

2. *Lack of data:* The analysis of the interviews revealed that the government, in general, faces difficulties in comprehending the specific groups that encounter energy injustices. They encounter obstacles in terms of access to adequate data, particularly concerning the energy-poor population. Municipalities heavily rely on the data provided by the TNO report to identify and address these groups and where they are located. While one municipality has its own data analysis centre, claiming improved targeting capabilities, the overall challenge lies in the collection and usage of accurate data. After which the formulation of tailored programs aimed at alleviating these injustices could be made more easily.
3. *Limited awareness and hard-to-engage groups:* This barrier builds upon the previous one, as once the groups experiencing energy injustices are identified, the challenge lies in effectively engaging them in the energy transition process, including energy decision-making. This challenge lies in two key aspects. Firstly, there is limited awareness among both citizens and the government regarding energy justice. Citizens are often unaware of the measures implemented by local governments to mitigate for example energy poverty, such as subsidies and insulation programs. Furthermore, the engagement of these citizens in the decision-making process is also often unknown by most citizens. Similarly, the municipality's understanding of the energy justice framework is generally limited, with emphasis placed on an affordable energy transition rather than a just one. Consequently, when attempting to engage citizens or provide assistance, municipalities encounter difficulties in reaching the target groups. This difficulty arises due to various factors, including language barriers, distrust in the government, indifference towards the energy transition, limited mental capacity, and time constraints of citizens. These factors collectively contribute to the challenges faced by municipalities in engaging citizens in their processes.

As previously discussed, engaging citizens and involving them in the energy transition and decision-making processes have significant challenges. Nonetheless, local governments persistently make efforts to engage citizens in energy projects, with certain limitations. The following methods are currently being employed to organize citizen engagement:

1. *Sharing information:* The lowest level of citizen participation is information sharing, although it serves as a foundation for facilitating further engagement levels. There are various methods of information sharing, including newspapers, flyers, websites, social media platforms, and public stands, all used by most municipalities. Through these channels, local governments share information about upcoming energy projects and policies with citizens. Additionally, during other engagement activities, the opportunity is taken to actively invite individuals to participate in these projects. It is crucial to ensure broad knowledge sharing to reach a wide range of citizens.
2. *Organising information evenings and webinars:* Another form of citizen participation at a higher level is organizing information evenings or webinars, either in-person or online, to provide comprehensive details about decisions or energy projects to citizens. This way offers an opportunity to delve into the advantages and disadvantages of the initiatives to gain support and to gather citizens' opinions.

3. *Stands on markets or other public places:* Some local governments actively engage with citizens by setting up stands in markets or other public spaces such as community centres. This allows them to inform individuals about specific projects, subsidies, or policies that may impact them. By engaging in conversations with citizens, authorities seek their opinions and perspectives, which can be utilized as input for policy improvement.
4. *Energy coaches and energy fixers:* A popular approach to addressing energy poverty and providing assistance to those in need is the deployment of energy coaches and energy fixers. These professionals visit households, particularly in less privileged neighbourhoods, to offer guidance on energy-efficient behaviour and provide immediate energy-saving measures like LED lights and sealing strips. They also aid in understanding financial and energy bills and potentially assist in accessing subsidies. However, the scalability of this approach is limited due to the significant capacity required.
5. *Advisory council:* Some municipalities have established advisory councils to provide recommendations to decision-makers and civil servants regarding energy-related matters. This inclusion of citizens in the decision-making process concerning the energy transition grants them a meaningful voice. However, there is a concern that not all segments of society are adequately represented within these councils.
6. *Financial participation:* Some municipalities engage citizens through financial participation, offering them the opportunity to invest in specific energy projects and gain benefits from their investments while having a say in the projects themselves. This approach aims to foster support for energy initiatives. Nevertheless, it is acknowledged that not everyone possesses the means to invest, resulting in certain groups being excluded from this approach.

One crucial distinction made by the majority of municipalities is the involvement of citizens in the energy transition itself versus their inclusion in energy decision-making processes. This differentiation is important, given that governments generally have no issues with citizens participating in the energy transition; in fact, they actively encourage such engagement. However, when it comes to energy decision-making, the level of citizen participation is often considerably lower, primarily due to fewer established participation frameworks specifically tailored for this purpose. Additionally, most local governments find that the decision-making process regarding the design of our energy system is “too abstract” and think that citizens do not want to be involved in this.

SQ2: “What are the perceptions, experiences, and needs of citizens and stakeholders in relation to energy justice and energy poverty in the Rotterdam- The Hague region and which groups are experiencing these energy injustices?”

Ultimately, the energy transition in the Netherlands will impact every citizen, leading to diverse perceptions, experiences, and needs. In-depth interviews with citizen representatives have been used to reveal these perspectives. Overall, it is seen that wealthier and higher-educated individuals are more actively engaged in and supportive of the energy transition. They invest in renewable technologies, collaborate on sustainable housing initiatives, and seek involvement in decision-making processes to help the government achieve its goals.

Another group consists of individuals who are less involved in the energy transition but possess sufficient income and stability in their lives. They are willing to contribute to the energy transition with the right incentives and are open to participating in decision-making processes if it benefits them or when it hits close to home. While they acknowledge the importance of the energy transition, they largely view it as the government's responsibility. Their needs include being informed about energy transition developments and reducing barriers to their participation in both decision-making processes and the energy transition itself.

The last group consists of low-income citizens, often residing in rental homes, who struggle to make ends meet on a daily basis. Their primary concerns revolve around immediate survival rather than thinking about the future of the energy system. Due to their circumstances, they may be unaware of simple changes they could make to their energy behaviour. Financial scarcity exacerbates their problems and hinders proactive engagement. Helping this group currently occurs reactively when they come into contact with relevant organizations. Their needs include proactive assistance with financial issues and home insulation. To facilitate their cooperation, barriers should be minimized, and the focus should be directed toward addressing their specific circumstances.

A special group involved in the energy transition includes housing corporations and private landlords. While their participation is crucial for achieving national energy goals, persuading them to contribute can be challenging. Profitability often takes priority, hindering their willingness to invest. The national government has taken the initial step by involving social housing corporations through legal mandates for insulation. The needs of this group revolve around ensuring innovation, sustainability, profitability, and involvement in decision-making processes.

Identifying specific groups experiencing energy injustices proves difficult, as previously mentioned. However, when examining energy poverty, affected groups often include large families, students, low-income families, the elderly, unemployed individuals, and those who spend a significant amount of time at home. Often, they reside in rental properties and face barriers such as scarcity, limited landlord support, or exclusion from financial support due to various reasons. Tailoring policies to meet their needs is crucial. These issues highlight distributional justice concerns.

Issues related to procedural justice or justice as recognition are often found with people who want to be involved but are left out or are not properly involved. In the case of the ROTHER, these are the energy corporations and highly educated people. It is important to identify the groups who want to be involved in the energy-related decision-making process and have proper processes in place to do so. Regarding the energy transition itself, it is important to at least give information to all citizens and try to involve the ones who want as much as possible.

The table below shows a summary of the stakeholder groups and the possible injustices they experience with a description of how this might play out. It should be noted that the distributional injustices are often in combination with low-income or low-quality energetic housing.

Stakeholder group	Possible injustices felt	Description
Stand-alone (parents)	Distributional justice (Energy Poverty) Justice as Recognition	As stated, this group is overly present in energy poverty due to the combination of low income and living in low-quality energetic homes. This group is therefore struggling with paying their energy bills and can experience stress and financial scarcity. The group is hard to reach and they are not able to participate in decision-making, their knowledge is therefore often overlooked in decision-making.
Jobless	Distributional Justice (Energy poverty)	This group is also struggling to pay their energy bills, due to a low income or due to the fact that they are often at home and need to heat the house.
(Members of) energy cooperations	Procedural justice	Members of energy cooperations are very enthusiastic about participating in energy decision-making. It is therefore important for them to be actually involved in this process.
Elderly	Distributional Justice (Energy poverty)	Elderly, often living in the city, is also a group often at home and need a warmer home. In combination with low income, this group could experience energy poverty.
People in rental homes from private landlords	Distributional Justice Justice as Recognition	The private rental sector has no obligation to better their housing quality, often resulting in low-quality energetic housing, which can lead to energy poverty. Furthermore, the private landlords are property owners and renters cannot place self-generation methods without consent, which means

		they are not able to participate in the energy transition.
Other citizens	Distributional Justice Justice as Recognition Procedural Justice Cosmopolitan Justice	There is a possibility that there are more different groups or individuals experiencing energy injustices, which should be taken into account when making decisions.
Non-native Dutch	Justice as Recognition Procedural justice	Non-native Dutch are hard to be involved in the energy transition and the decision-making around the energy transition. It is important to make sure that there are communication methods to support these people and hear the voices of this group as well.
Students	Distributional Justice Justice as Recognition	Students are often in rental homes, which are often energetic low-quality and have a low income. They are not able to make their housing more sustainable. However, they have time and the motivation to be included in the decision-making.

Table 3: Groups of citizens experiencing energy injustices

SQ3: “What are the potential improvements or alternative approaches that can help the efforts of the RES Rotterdam- The Hague area (and its local governments) in achieving energy justice?”

In the context of the Rotterdam-The Hague area's Renewable Energy Strategy (RES), instances of energy injustices affecting residents have been identified. While addressing these issues primarily falls within the responsibility of local governments, there are opportunities to improve the energy justice situation within the RES. The following are proposed improvements:

1. *Involvement of inhabitants:* In the context of the RES 1.0 document development and ongoing discussions, the direct involvement of inhabitants is currently lacking, despite the direct influence these talks have on them. Interviews revealed that RES members perceive the decisions and plans as too abstract for citizens to comprehend. However, there are citizens who express a willingness to participate in the process. While organizations have a platform within the RES meetings (Platform RES), citizens themselves are not actively involved. Three alternative approaches can address this issue. Firstly, increasing the involvement of energy cooperatives, which primarily consist of citizens with an intrinsic interest in the energy transition and knowledge about local developments, can provide valuable insights for RES decisions. Secondly, establishing a citizen-led advisory council within the RES, comprised of individuals familiar with their neighbourhoods, can serve as a source of information for the RES. Lastly, actively engaging city councils in the RES decision-making process, as representatives chosen by citizens to govern local municipalities, can ensure citizen interests are considered.
2. *Providing clarity:* Another challenge within the RES is related to the clarity of the decision-making process for its members. Different interpretations exist among municipalities, with some regarding RES decisions as binding while others do not. To address this issue, it is advisable for the RES to provide clarification. One proposed approach is to increase the emphasis on knowledge sharing among members, facilitating collaboration and helping each other in cross-border energy projects. By avoiding excessive involvement in actual decision-making processes, the RES can focus on innovation and facilitate the energy transition. This approach recognizes that local municipalities should not individually reinvent solutions but rather learn from one another. Particularly, for cross-border energy initiatives like windmills and heat networks, the RES can play a valuable role. Furthermore, even though the RES does not make decisions itself, collaborative efforts among its members, with a focus on empowering local governments to make decisions, can enhance effectiveness. The RES should therefore pose a more facilitating role rather than a decision-making one. These improvements have the potential to strengthen the overall functioning of the RES.

The local governance structure also needs improvements in the context of the energy transition and energy justice. It is crucial to acknowledge that these enhancements are dependent on financial assistance from the national government. Currently, such financial support is primarily provided on an incidental basis, while the growing presence of SPUKs increasingly restricts the manoeuvring capacity of local governments. Moreover, ongoing decentralization and the additional responsibilities delegated to local governments require supplementary financial resources that have not yet been granted by the national government, leaving a gap in finances for municipalities. To effectively address energy justice concerns, it is imperative for the national government to extend structural financial support to local governments and establish an appropriate legal framework that enables manoeuvrability. Only through such measures will the envisaged improvements in the local government's energy-related initiatives become attainable.

1. *Investing in insulating homes:* One of the significant challenges encountered in the energy transition extends beyond the mere generation of sustainable energy sources. It is also important to insulate residential buildings, thus reducing energy loss in these buildings. However, citizens living in low-quality energetically inefficient homes are often burdened by energy poverty and lack the means to invest in insulation materials themselves. These homes may also fall under the ownership of social housing corporations or be owned by landlords who are hesitant to make such investments. To address the needs of the energy poor, the establishment of insulation programs is important, also the involvement of private landlords and social housing entities is crucial and offering financial assistance to other citizens.

Financial support can be provided through two different approaches. Firstly, providing vouchers to the less fortunate citizens, which can be redeemed for insulation materials. Secondly, offering low- or no-rent loans to facilitate the transition toward sustainable housing. Both methods serve to alleviate financial constraints for those who want or need to insulate. Implementing insulation programs also presents a cost-effective strategy, as bulk procurement of materials reduces overall expenses. This approach caters to individuals who possess the means to insulate their homes but require an additional incentive to do so. Private landlords should be actively engaged in this process as well, to reduce the barrier of making their properties more sustainable. Similarly, housing corporations should be encouraged to participate. By providing "free" financial support to individuals in need and providing the middle class with an affordable way to insulate, these initiatives promote distributive justice and narrow the wealth gap arising from the energy transition.

2. *Engaging with different groups:* To enhance procedural justice and justice as recognition and gain an understanding of public perspectives on energy-related policies and projects, citizen participation with a diverse range of groups is crucial. The analysis of the previous subquestion revealed the existence of three distinct groups regarding citizen engagement. The first group comprises individuals who actively seek to participate in decision-making and contribute to the energy transition. The second group is interested in participating in the energy transition but prefers minimal effort and involvement, primarily focusing on decision-making that directly impacts their lives. The final group lacks the capacity or motivation to participate in both aspects. To address these groups effectively, specific approaches are recommended. For the first group, active engagement by the local government

through means such as advisory councils, surveys, and interviews would be beneficial. By actively involving these individuals, their valuable insights can inform decision-making processes. To help the second group, it is essential to ensure that they are well-informed through various communication channels and encouraged to participate in the energy transition itself. Nudging strategies, such as subsidies, can be employed to motivate their active involvement and lower the barrier to do so. The last group should receive extensive assistance without the expectation of participating in decision-making unless they express a desire to do so. By providing support tailored to their needs, all individuals feel valued and supported, which in turn generates broader support for energy policies and projects while upholding principles of distributional justice.

3. *Supporting energy cooperations:* Local governments lack the capacity to do all energy-related activities by themselves, which is also stated in previous parts. However, there are citizens that actively want to contribute to the energy transition. These citizens could establish energy cooperatives to collectively work on sustainable energy generation methods, insulating their homes, and sharing the resulting benefits among the members of the cooperation. Energy cooperatives have been identified as a means to enhance energy justice, but they currently lack adequate support. It is, therefore, crucial to provide assistance to existing energy cooperatives and promote the formation of new energy cooperatives, involving them in decision-making processes and energy projects. Energy cooperatives can be assigned the task of distributing information to their members, covering topics such as subsidies and energy policies. In this way, energy cooperatives can help lower the workload of the local governments. Furthermore, they can play a role in helping alleviate energy poverty. Supporting and empowering these cooperatives has the potential to enhance energy justice, ensuring that various segments of the population can actively participate in the energy transition while also benefiting from it.
4. *Energy fixers and Energy coaches:* One thing that was mentioned in almost all interviews is the usage of the energy fixers or energy coaches, who were deployed in the energy crisis of 2021-2022. These energy coaches engaged directly with the citizens in the neighbourhoods with a high likelihood of energy poverty and went door to door to help them. They had the responsibility of giving advice on energy-efficient behaviour, assisting with financials, helping with energy subsidy applications, and implementing immediate energy-saving measures. By offering these services at no cost, the number of individuals experiencing energy poverty could be reduced, and the disparity between affluent and economically disadvantaged groups is mitigated. To promote distributional justice, it is important for local governments to allocate funding and provide support to these initiatives.
5. *Working together with societal organisations:* Another challenge faced by the local government in achieving energy justice is the difficulty in defining and identifying the citizens who are experiencing energy injustices. The energy-poor citizens often come to the attention of social organizations operating within the municipalities, providing, among other things, financial assistance. These organisations often have a reactive approach in identifying this energy-poor group, as they help when assistance is being sought by citizens, which is most often the time when it is too late. To enhance the

local government's efforts to identify these groups of citizens, a potential improvement would involve actively collaborating with these societal organizations to proactively identify and address the needs of energy-poor citizens. By adopting a proactive approach, further financial trouble can be prevented, ultimately improving energy justice.

6.1.2 Conclusions on the Main Research Question

With the description of the subquestions, an answer to the main research question can now be formulated. Once again the main research question is presented and an answer to this question is presented.

MRQ: "How do the local and regional governmental bodies in the Rotterdam- The Hague area deal with the energy transition in light of Energy justice and Energy poverty?"

In recent years, there has been an increase in energy justice in energy-related articles. However, within local and regional governance, this approach is not used that often. Given that most interviewees were unfamiliar with the energy justice framework. While instances of energy injustices exist within the energy region, these issues are not explicitly labelled as such. Therefore, the short answer to the main research question suggests that local and regional governmental bodies in the Rotterdam-The Hague area are not currently approaching the energy transition with a specific focus on energy justice.

However, this response needs to be nuanced. Although the governmental bodies in this region may not be familiar with or utilize the energy justice framework, they are nonetheless committed to a just transition in their view, recognizing its importance. Many interview participants expressed that the energy transition should be just, one that does not increase energy prices for citizens. Energy justice is mostly viewed through a financial lens by the governmental bodies in this region, stating the wealth gap is widening due to the energy transition and emphasizing the need for solutions. Additionally, participants recognized the crucial role of citizen participation in the energy transition. However, a distinction is drawn between involvement in the energy transition itself and involvement in decision-making processes related to the energy transition. Engaging citizens in the energy transition is seen as essential for a successful energy transition, with financial incentives and investment opportunities used to accelerate the transition and gain support. Decision-makers acknowledged the challenge of involving citizens with limited financial resources and are seeing solutions to this problem, but this is currently rather hard. When it came to involving citizens in decision-making processes, decision-makers often regarded the energy transition as too abstract, especially on a regional level, and considered the city council as a sufficient form of involvement. While organizations and private companies are frequently consulted, citizens are often left out of the process. However, some municipalities in the region have established advisory groups consisting of citizens to consult on energy decision-making. In terms of cosmopolitan justice, there are limited cases due to cross-border collaboration through the RES. Resulting in fast remediations when there were cases. Despite the absence of explicit adoption of the energy justice framework in decision-making, governmental bodies in the region rely on common sense to decide what is just and what is not, while the framework might offer a clearer approach.

Furthermore, differences in the governance of energy transitions by local governments contribute to different experiences of the energy transition among citizens in different municipalities, potentially resulting in inequity and perceived injustice. To address this, the RES should focus on knowledge sharing and piloting initiatives to identify effective approaches to energy justice in different contexts. Local governments can then use these examples to ensure a more equitable perception of the energy transition across the region, which is crucial for its success.

Regarding energy poverty, it has been shown that governments at all levels acknowledge its significance and are taking measures to alleviate it. The national government has provided additional financial resources to municipalities for addressing energy poverty and has implemented a price ceiling for energy. Local governments, in turn, are implementing measures such as energy coaching and insulation programs to alleviate this issue.

In conclusion, the governmental bodies in the Rotterdam-The Hague area are actively working towards energy justice, but have differing interpretations of the concept. Unifying the definition of the energy justice framework within the region is vital, and the RES can play a role in facilitating this process.

6.2 Academic Discussion

In this part of the study will discuss the results of the research and discuss these in light of the current research that has been conducted and discusses the added value to the research field.

6.2.1 Discussion in the Light of Energy Justice

The study reveals that the implementation of the energy justice framework in the decision-making process is currently lacking awareness among local governments. This finding contradicts the research of Haldar et al. (2023) and Qian et al. (2022), who emphasized the importance of incorporating the energy justice framework. However, despite the absence of explicit implementation, there are indications that local governments in the region are striving towards a more equitable energy transition.

Additionally, the research confirms the presence of energy poverty, particularly in larger cities, aligning with previous studies (Streimikiene & Kyriakopoulos, 2023; TNO, 2023). Hoppe's (2021) research also expressed concerns about energy justice, energy poverty, and public values in the region, which warranted further investigation. The findings of this study support these concerns, revealing instances of energy poverty and highlighting public dissatisfaction with energy injustices.

In terms of distributional justice, the research identifies energy poverty and a widening wealth gap as significant concerns. However, effective measures, such as energy coaches and insulation programs, are being implemented to mitigate energy poverty, as reported by the participants. These findings contribute to the literature by demonstrating proven strategies to address energy poverty.

Regarding justice as recognition, the study indicates that the rights of individuals affected by the energy transition are being considered, thanks to the decentralization of decision-making to local governments. Nevertheless, there are shortcomings in this aspect, particularly in addressing the needs of hard-to-reach individuals who often remain unheard.

In terms of procedural justice, the region demonstrates attention to this tenet with the establishment of citizen participation initiatives and transparent decision-making processes. However, improvements are still needed, such as ensuring inclusive decision-making that involves all citizens and addressing unclear decision-making properties associated with the Regional Energy Strategy (RES). The research emphasizes the importance of local-scale citizen participation rather than solely focusing on the energy transition.

Regarding cosmopolitan and restorative justice, instances of cosmopolitan injustice are identified in the region. However, cooperation between local governments at a regional level has proven effective in resolving these issues. Furthermore, measures to restore redistributive justice, such as financial support for those in need, are observed and underscore the necessity of addressing this aspect.

Although this research does not directly contribute to the literature on the energy justice framework itself, it utilizes the framework to fill other research gaps and shed light on various dimensions of energy justice.

6.2.2 Discussion of the Governance on Local and Regional Levels

This thesis has also delved into the governance and decision-making processes within the RES Rotterdam- The Hague and the local governments within this region, trying to contribute to the gap regarding as formulated by both Hoppe & Miedema, 2020 and Swarnakar & Singh, 2022, to study the regional and local governance of the energy transition.

Regarding the regional governance of the energy transition, it became clear that the RES does not have any formal mandate to make decisions. Decisions being made are more like mutual agreements but not legally binding. These agreements first have to go through the city council to be binding, which has also been done by the RES 1.0 document. However, it became clear that some municipalities do still not see the RES as binding while others do, this causes some conflict as became also present in the interviews themselves. These conflicts confirm the findings by van Dijk et al. (2022) who also stated that conflicts arise when a lot of stakeholders come together. In the region itself, there is little to no citizen, as it is deemed a task for the local governments to be in contact with its citizens.

When looking at the round model of Teisman (2000), the decision-making process of both the regional and local governments is easily described, although the RES does not make decisions. For example, the RES 1.0 document was set up, there were different rounds, arenas and actors. There are many different rounds that occurred in this process, which are not always traceable. However the arenas were clear, the first arena is the ANE where civil servants within the energy transition of each municipality come together and discuss how much and how sustainable energy generation each local government should account for among other things. This decision goes to another arena, namely the BNE where the

decision-makers come together and discuss the outcomes of the civil servants. There are several rounds in these arenas with the same stakeholders. The decision made here is going to the next arena, which is the city council. Where more rounds take place with sometimes contact with the RES-groups. After some rounds, the decision goes back to the RES and then back and forward until an accord is achieved. In the local government, there is the same process in play. When doing citizen participation or a citizen advisory council there are extra arenas and several extra rounds. Slowing down the decision-making process, but also incorporating extra stakeholders and therefore extra knowledge and more considered decisions are being made. Incorporating these extra stakeholders also enhances energy justice.

From a multi-level governance perspective the RES could in the first instance be seen as an extra layer between the province and the local governments, but knowing that the RES does not have a legal mandate this is not the case, nor do the local government want it to be. When looking at the communications streams and hierarchy it is seen that within the RES all the participants are equal, thus the province, municipalities and waterboards are working together equally. However, outside the RES this is not the case and is the province higher in hierarchy and can force certain decisions, like placing windmills, upon the local governments when they are not meeting their goals. The national government has the highest hierarchy in this case and is financing the local governments to do the energy transition, combined with the SPUK's the national government is pulling the control to themselves, despite the decentralisation which is currently happening. This confuses the local governments and they will have too little money left to do their tasks while getting more tasks. This is slowing down the energy transition, as the local government is currently responsible for carrying out the energy transition.

The current governance structure of the energy transition is highly complex, the local government have the responsibility, members of the RES do not know for sure if their decision is binding or not, and the national government is decentralising but also trying to take more control from the local governments. From both a rounds model and multi-level governance perspective it is hard to understand this complex decision-making process and when citizens are becoming more involved in the energy transition decision-making, there is even more complexity added. There are therefore calls for a good regulatory framework from the national governments to make sure that the local government helped and that they can take responsibility as they should.

6.2.3 Applicability to other Energy Regions

This research was conducted within one of the thirty energy regions within the Netherlands, respectively the Rotterdam- The Hague energy region. Each of the energy regions is different in respect to other energy regions, the same goes for the Rotterdam- The Hague energy region. This region characterizes itself by its large area and different sizes of municipalities collaborating in the region. The results of this research can therefore not directly speak for the other energy regions, because of this diversity of regions and the different regions are organising their decision-making in another way. However, the methods applied in this research can be applied to other regions to answer the same research questions in the respective energy regions. The results of this results can, however, function as a hypothesis for further research in other areas.

6.3 Limitations of the Research

Limitations of a report are an integral part of doing research, thus also this master thesis has its limitations. Acknowledging these limitations should give transparency in the research and highlights the need for further exploration in this field of research. This section will delve into the boundaries of this research and will examine its flaws.

6.3.1 General Limitations

The first limitation of this research relates to time constraints, a common challenge faced in master's theses due to the hard deadline. The time limitations may have led to certain aspects of the thesis being rushed, such as the literature review, where relevant sources might have been missed due to limited time and reliance on Scopus for searches. These missed articles could have added crucial insights into the current state-of-the-art research, potentially altering the flow of the interviews with stakeholders and citizen representatives. Moreover, due to the time constraints relistening and transcribing the interviews, was not possible, therefore relying on tools like Microsoft Teams and Word to transcribe the data. This could have led to data loss or inaccuracies in transcription, which could have influenced the overall findings in the interviews and the conclusions on the research questions, either a more nuanced understanding or a definitive result could have been the case when transcribed by the researcher. The time constraints had an effect on this study in a way that more stakeholders, but also more citizen representatives could not have been interviewed. These could have other answers, insights and ideas on the energy transition and energy justice, which could have caused data loss or led to a one-sided story of this story, while nuances could have been introduced when interviewing more participants.

Another limitation is the research's focus only on the Rotterdam-The Hague area, which is seen as a large region and is, according to the participants of the interviews, different from most other regions. The results of this research are therefore only applicable to this region and it is not possible to generalize the data to other regions or to conclude something in a broader context than only this region. Other regions could have provided more comprehensive insights into the governance processes and energy justice within the Netherlands than those presented in this research.

The interviews, which lasted about an hour per interview, provided a lot of data which was rich and in-depth. This resulted in a large data pool which had to be analyzed in a relatively short time. It made it challenging to derive one definite conclusion on the research questions and thus resulted in varied and nuanced conclusions. Furthermore, due to the nature of the data of the interviews, it is hard to establish strong correlations between the different answers of the interview, also limiting the overall ability to draw a strong conclusion related to the research questions.

6.3.2 Limitations of the Interviews and Media Analysis

The first limitation regarding the method of using interviews relates to the use of citizen representatives as participants. These citizen representatives were chosen to provide insights into the current perspectives and needs of citizens in the Rotterdam- The Hague area in the context of energy transitions. However, the information that has been obtained from these citizen representatives can be seen as second-hand, as it reflects the understanding of the participants regarding the perspectives and needs of citizens and not the direct viewpoints of the citizens they speak for. Similarly, the media analysis used to address this subquestion offers insights through a journalistic lens, which may also not align with the authentic needs and perspectives of citizens, as they would give themselves. This could affect the results in a way that these insights gained from the media analysis do not align with reality, which is a risk that could cause the recommendations based on the media analysis to be invalid. To mitigate this limitation, there are interviews with citizen representatives to validate the results of the media analysis.

Furthermore, the number of interviews conducted with citizen representatives was limited to only four, and these participants held different functions, which resulted in a large variety of interviewees. This led to a high amount of variations in their responses regarding the questions asked. This sample size may not be sufficient to draw comprehensive conclusions for the entire region and might not fully capture the diverse range of perspectives and opinions related to the research questions. The small sample size of citizen representatives could present biased results, as the result section relies on only four different responses of these kinds of interviews. Therefore directly impacting the generalizability of the results to the whole region.

One limitation that comes back in any research project is subjectivity and bias. These include the researcher's own personal views and beliefs, which could have influenced the line of questioning during the interviews and the interpretation of the data. A researcher should always strive to be as objective as possible, subjectivity is always a risk in such research, which can lead to a somewhat shifted representation of the research topic and data. This could have happened in this research as well. Which impacts the results in a way that only the most interesting or striking insights given by the participants could have been included. This could have led to biased results in this thesis.

The limitations of the study possibly lead to either biased results or limited generalizability outside this region. It is important for researchers to acknowledge these limitations and the potential of the results. However, it should be mentioned that these limitations are possibilities.

6.4 Future Research

Based on the identified limitations and the obtained results in this research, there are suggestions for further research in this field. As research is an iterative process with no definitive end, these recommendations address both the existing outcomes and the acknowledged limitations, pointing towards potential knowledge gaps that future researchers could explore for more conclusive findings.

Firstly, it is crucial to acknowledge that this study was conducted only in one region within the Netherlands, namely the Rotterdam- The Hague area, leaving 29 other regions with their unique challenges and perspectives unexplored. Therefore, it would be valuable to extend this research to these other regions where similar investigations have not been carried out yet. Such a broader approach can provide insights into the specific contexts of each region, offer cross-learning opportunities, and contribute to a more generalized understanding of energy justice and best practices across all regions.

In the current researched region, further opportunities for research exist as well. Given the limited number of interviews with citizen representatives, there is a possibility that crucial insights into the perspectives and needs of citizens in the energy transition have been missed. To address this, future research could delve deeper into the perspectives of these groups within the region, using the same interview approach with citizen representatives, while also directly engaging with different citizens. Furthermore, this research could be extended to other regions as well. Such extended research could also serve as a foundation for generalizing the results to a national level.

Additionally, the study revealed that local and regional governments are not fully aware of the energy justice framework and its potential in decision-making processes, despite the calls from existing literature (Haldar et al., 2023; Qian et al., 2022). Future research could, therefore, explore the possibility of integrating an energy justice-based regulatory framework into decision-making at all levels. Investigating the potential benefits and challenges of adopting such a framework could contribute to more just and informed decision-making in the energy transition.

Furthermore, this study offered recommendations and policy implications specifically tailored to the region under investigation. However, it is essential to further investigate the effectiveness of these recommendations in practice within the region and outside of this region alone. Assessing their implementation and impact could provide valuable insights for policymakers and stakeholders, enabling them to iterate on their approaches and improve them.

Additionally, the research identified three distinct groups of citizens and highlighted the importance of involving these diverse stakeholders in the energy transition and decision-making processes in different ways. Future research could focus on validating and further understanding these identified groups, along with exploring different strategies for their meaningful participation in decision-making for each of these groups. Developing a framework for citizen engagement that local and regional governments can use to enhance transparency and address energy injustice could be a potential avenue for research.

In conclusion, while this research has shed light on various pertinent aspects related to energy justice, there remains ample room for further investigation. By delving into these topics and related concepts, future studies can contribute to a deeper understanding of energy justice and pave the way for more inclusive and equitable energy transitions.

6.5 Policy Recommendations

This research has investigated the various decision-making process around the energy transition in the Rotterdam- The Hague region, which has resulted in insights and possible improvement points in governance. The following subchapter will delve into the different recommendations regarding policy improvements, this will be done from a multi-level governance perspective, beginning with the national level and going down from regional to local levels.

6.5.1 Policy Recommendations on the National Level

This research has illustrated and found that the national government is mostly responsible for the finances of local governments. The introduction and growth of the number of SPUKs, increasingly narrow down the manoeuvring space of the local governments, while they are responsible for the energy transitions. Narrowing down the manoeuvring space could slow down the energy transition and lower energy justice. This while continuing to decentralize and give local governments more tasks. It is therefore advised for the national government to

1. *Provide local governments with structural financial support without the need to spend it on specific causes:* Currently, financing happens on an incidental basis, while structural financial support is needed to lead an effective energy transition. Furthermore, local governments need the freedom of giving a place for their money themselves to specifically govern the energy transition their own way, as each local government has its own problems.
2. *Provide a concrete regulatory framework for the energy transition:* There are calls from municipalities that there is no adequate regulatory framework for the energy transition, while some participants called for this. In this framework, the national government should include the energy justice framework.

6.5.2 Policy Recommendations on the Regional Level

The province and the RES region, although not they are not on the same level of governance and arguably the RES does not govern at all. They both have the same challenge in the energy transition. Which is the lack of contact with its citizens and therefore policy making based on energy justice is hindered. Therefore some changes in the governance structure have to be made these changes are

3. *Focus on the sharing of knowledge instead of governing:* As stated, the province and the RES are not engaging with citizens, which is the responsibility of the local governments. In light of energy justice, it is not wise to make decisions when not consulting citizens. The RES specifically cannot make governance at all, as this causes confusion and conflict between its members. It is therefore advisable to shift from governing to facilitating the sharing of knowledge between local governments,

so they can all implement best practices and do not have to invent the wheel themselves.

4. *Foster collaboration in cross-border projects:* The energy transition is a multi-facet complex problem with various stakeholders and the energy transition does not stop at the municipal borders. These energy projects need to be governed properly and these could be tasks for regional government, fostering the collaboration between municipals in an objective way.

6.5.3 Policy Recommendations on the Local Level

Local governments are mostly responsible for carrying out the concrete steps to a more sustainable future and are at the forefront of this energy transition. It is therefore important that the local governments have the right toolset to do this properly. Out of the analysis, there are some improvement points for the local government as well. Which are diverse and listed below.

5. *Improve citizen participation:* The research shows that the local governments are involving the citizens in the energy transition but not as much in the decision-making process. However, according to the energy justice framework, this should be done. The recommendation is, therefore, to involve the citizens more in the decision-making process, this can be done in various ways described earlier in this thesis.
6. *Strive for 50% local ownership in energy projects:* The research has found that while this is written down in the climate accord, it is not yet implemented that much. However, financial participation can help to generate support for energy projects and divide in the benefits of the projects.
7. *Start-up insulating programmes:* To kill two birds with one stone, alleviating energy poverty and accelerating the energy transition. The local governments should set up insulation programmes which vouchers for low incomes, loans for middle incomes and bulk buying of materials for higher incomes. Incentivising all groups to insulate their home and prevent energy loss.

With the strategies in paragraph 5.1.1 and these policy recommendations, the governments of all levels can step towards a more just energy transition.

Another possible policy implication could be to use media analysis to find out the perspectives and issues citizens in the different regions face regarding the energy transition. This approach has been incorporated in this research and found interesting insights regarding the needs, complaints and perspectives of different citizen groups in the energy transition. This approach can therefore be used for governments to test if their measures are well taken and work or to gather suggestions for further policies. Resulting in better-tailored policies for citizens, generating more support and establishing another level of citizen participation as they feel heard this way.

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Appendix A: Literature Review

The operationalisation of the literature review is given in this Appendix. The search engine used to find relevant papers is Scopus, in this search engine Boolean strings with keywords are used to define and search for relevant papers. Papers will only be included if they are open access and are sorted on relevance, they are selected based on their abstract and the relevance to the study. When there are relevant sources in the selected papers, these can also be used to snowball and give a further overview. The selected papers will be used to give an overview of the literature on the subject and define concepts for the paper. In this appendix, the short summaries of each selected paper are given, with its citation and way of finding this paper.

Boolean search	Source/citation	Summary
<i>"energy justice"</i> AND <i>"energy transition"</i>	(Lee & Byrne, 2019)	Lee and Bryne argue that energy justice is becoming a well-established research topic in energy policy, however, they acknowledge that the framework has some limitations. They propose a new or modernized framework with three new tendencies: Preference for large-scale systems. centralisation of production, and risk-taking. They furthermore mention that social science is playing a great role in the energy transition. The framework proposed is to give more insights into the energy justice problems and focus on the drivers of energy justice, where resorting to recognition is a key part. The framework is illustrated in the case of Nuclear energy in Korea.
	(Stojilovska, 2021)	This article researched the role of institutions, and more specifically the Ombudsman, in tackling energy poverty. The study mostly focuses on procedural energy justice. It utilised a case study from the Ombudsman in Austria and North Macedonia. It revealed that the Ombudsman is found useful in revealing and reducing institutional factors of energy poverty. It concludes that the way how the energy market works can affect whether people can afford energy or not. Therefore, companies who are providing energy have a big responsibility to make it affordable and accessible for everyone. Further research is required to see if the Ombudsman is effective, but in this study, this is the case
	(Van Bommel & Höffken, 2021)	Van Bommel & Höffken (2021) utilize a systematic literature review to explore how energy justice is bespoken in academic papers with a focus on community energy initiatives in Europe. It finds that community energy justice should be looked at through three different views, respectively: Energy justice occurring within community energy initiatives, between initiatives and related actors and beyond initiatives. The authors argue that considering the policy efforts to stimulate community energy development, energy justice impacts and be enhanced due to the combined strength of energy communities. The review also states that a broader understanding of energy justice in combination with these communities is needed to have a just energy transition.
	(Qian et al., 2022)	In this paper, 1910 publications on energy justices are quantitatively analyzed, to map the current knowledge of this emerging field of research. It revealed that energy justice is a relatively new subject and is mostly applied in renewable energy transitions. The paper underlines the significance of outlining the distinctive characteristics of energy justice and its role as a useful tool for decision-making. Furthermore, the authors suggest that researchers should focus on ensuring energy justice and equality for marginalized communities during energy transition and develop a forward-looking framework to guide policymaking. The paper highlights the need for sustainable and meaningful outputs in the young field of energy justice.

	(Lavrijssen & Vitez, 2020)	Lavrijssen & Vitez (2020) use a case study of the Dutch heat market to explore how the concepts of energy democracy, energy justice and the principles of sufficient market regulation could help the development of a consistent approach to the regulation of the energy sector. They highlight the need for flexible regulation in the heat market, with supervision and citizen participation. They argue that with the introduction of the fourth and fifth-generation heat networks, it is not necessary to have technology path-dependent regulation anymore and allow unbundling and third-party access. They find that more citizen participation can help to achieve energy justice and energy democracy.
	(Haldar et al., 2023)	Haldar et al. (2023) give an overview of the energy transition in India, as the country is trying to achieve net zero in 2070. However, currently, 80% of the electricity is coming out of fossil fuels. They refer to a study that analyses how justice is needed in India's transition and identified eight major themes. The researchers suggest that a clearer integration of energy justice concepts should be taken into account in decision-making and the need of mainstreaming these justice questions.
	(Iwińska et al., 2021)	The article states that energy justice is a framework for discussing fairness in energy systems, which has gained more importance in discussions of energy transitions. It is an overarching term used to express different concerns regarding energy developments across diverse groups. The future of Energy justice is characterized by two trends: an effort to standardize research and discussions on energy in Social Science and Humanities and a request for more contextualization of what Energy justice truly means for individuals in specific places.
	(McCauley et al., 2019)	This paper discusses the energy transition through an energy justice lens, discussing that energy justice should be prioritised in the energy transition. This is to ensure fair and equitable access to resources and technologies. A framework is needed for this, to address, distributional, procedural and recognition inequalities. Research shows that the field of energy justice is expanding, with a more holistic view of the topic emerging. This paper, it is discussed how energy justice should be addressed and applied to all components of the energy system, including actors and policies. It suggests that further research in non-western energy justice is needed as well as an integration of frameworks. Lastly, they call for further research into energy democracy and energy communities.
	(Swarnakar & Singh, 2022)	This paper is looking into the local governance of the energy transition and the need for justice for the local stakeholders of the energy transition. They use a systematic literature review on the Web of Science and grey literature to do so, 569 sources are used. They found that energy justice is a growing field of research, but there is limited focus on local governance in these energy transitions. Furthermore, they point out that there is a gap of knowledge in the just energy transition and its outcomes in the local scope.
	(Evensen et al., 2018)	This study taps into the public perception of who should fund programs to ease the just energy transition in the UK. It finds that British citizens view the government and energy companies as more responsible for the costs than they are themselves, they accept a role for the public and individuals to fund these transitions, it is however dependent on how the transition is implemented. The report makes specific policy suggestions for the government, such as the amount and types of environmental and social levies that are workable, based on popular approval, and alternative methods of financing energy transitions so as not to go beyond the bounds of public acceptance.
	(Correljé, 2021)	Correljé (2021) argues that the concept of energy justice is getting more associated with the affordability, reliability and sustainability of our energy supply as well as how various social-economic groups are impacted by the (dis)advantages of the energy transition. When implementing the idea of energy justice in the energy debate, it is important to take the socio-political context and policy-making into account. He argues that the energy transition is likely to show a wide variety of effects experienced by stakeholders and the concept of energy justice provides a starting point for identifying possible sources and

		forms of injustice. He states, however, that understanding and identifying conflicts and values compromised is necessary to detect and avoid injustices. Lastly, he argues that there is a need for procedural justice to gain citizens more self-determination in their neighbourhood and reach a workable agreement.
	(Partridge et al., 2018)	The article asserts that energy justice issues are intertwined with changes in material and social systems that support energy infrastructure, and the timing of these changes is crucial in determining their consequences. Urgency is seen as a significant factor in shaping public views on energy proposals and justice concerns, with resistance to government and energy company claims that rely on urgency. Participants in the study voiced concerns about distribution, environmental inequalities, public participation, and recognition, which are influenced by the temporal aspects of energy initiatives. The authors propose that examining urgency provides novel perspectives on justice issues related to technological development and energy transitions.
	(Szulecki, 2018)	In this article the concept of "energy democracy" is explored, which is relatable to other concepts like environmental and energy justice. The Author argues that energy governance should be more democratic. She discussed the prosumers and that they would be an ideal citizen, highlighting the importance of the energy transition. The article proposes an analytical conceptualization of energy democracy defined along three dimensions: popular sovereignty, participatory governance, and civic ownership, and suggests measurable indicators for operationalization. Lastly, the author argues that further research is needed in this area.
((<i>"Energy transition" AND "regional") AND ("Energy justice" OR "energy poverty"</i>))	(Bouzarovski & Herrero, 2017)	This paper talks about energy poverty is a widespread issue in Europe, with high levels of energy poverty in southern European countries. It researched the link between regional economic inequality and the energy transition. Found is that the classic economic distinction between the core and periphery is relevant to energy poverty, where more poverty is found in the periphery. Furthermore, one of the drivers of energy poverty is energy prices.
	(Streimikiene & Kyriakopoulos, 2023)	Energy poverty is a multi-dimensional issue that is becoming more present due to the energy transition. The article states that the impacts of the war in Ukraine and COVID-19 on energy prices and therefore energy poverty are significant. It is important to alleviate future energy poverty, and strategies need to be developed. The authors argue that there is no indicator for energy poverty as it is highly context-dependent.
	(Hoppe & Miedema, 2020)	Hoppe & Miedema (2020) touches upon the lack of attention paid to the regional levelled government in the energy transition. To address this issue a literature study was conducted to answer the questions "What does the governance of regional energy transition entail? How can it be conceptualized? And what does it mean in practice?". They presented a conceptual governance framework, consisting of five clusters, respectively structural characteristics of the regional network, regional network composition, actor characteristics, regional network governance and external factors. The Authors applied this proposed framework to the case of the west-Brabant region in the Netherlands, revealing the relevance of each element of the framework, especially the structural characteristic of the network, regional governance and actor characteristics.
"Regional energy transition" OR "Regional energy strategy" AND "Netherlands" OR "Dutch"	(Lelieveldt & Schram, 2023)	In this paper the author discusses the increasing regional government arrangement made in the energy transition and the need for stakeholder participation. They use a case study in the regional energy strategy (RES) in Zeeland, revealing that this RES has a weak involvement of citizens and other stakeholders. They suggest that it is important to have procedural justice and that this requires clear rules to outline stakeholder participation and encourage local governments to involve stakeholders who are beyond the "usual suspects". They lastly suggest that clear process requirements are needed to fulfil ambitions for inclusiveness and participation.

	(Van Dijk et al., 2022)	The authors of this article are researching the influence of interactions between different governing bodies on the capacity of the Dutch energy regions and how they are governing the energy transition. They use the multi-level governance framework and transformative climate governance perspective to do so. Van Dijk et. al. (2022) found that unclear responsibilities and roles, dependence on traditional hierarchical structures and high transaction costs are obstructing the current governance approaches to the energy transition. Furthermore, they found that The lack of awareness, engagement, accountability mechanisms, and democratic legitimacy are major issues that need to be addressed with national government guidance to balance clear scopes and flexibility.
<i>"Energy poverty" AND "energy transition" AND ("Dutch" OR "Netherlands" OR "The Netherlands")</i>	(Mashoodi & Bouman, 2023)	The authors argue that the impact of household energy consumption on fuel poverty and global greenhouse gas emissions is great. The study analyzed the household energy consumption in Dutch residential areas with a (weighted) regression analysis, which cooperates with the social demographics (gender, age, ethnicity, income, home ownership, microclimate, urban morphology and land cover). The study states that women with an immigration background, single mothers, women in low-quality buildings and warm climates, and elderly, rural men are among the most energy-dependent gender groups in different neighbourhoods. District-specific strategies are advised to support vulnerable populations, such as childcare centres, community centres for older, rural men, and vocational facilities for immigrant women, in order to alleviate the causes of energy poverty. In accordance with the "right to energy" framework, these findings call for the adoption of energy policies that guarantee equitable life chances for all residents.
	(Mulder et al., 2023)	This paper did a spatial analysis of energy poverty in the Netherlands with the goal to set up a national energy poverty monitor. The study reveals that energy poverty is very spatially concentrated than income poverty and mainly occurs in peripheral regions of the Netherlands plus some densely populated urban districts. They define energy poverty as households with a low income that either face high energy costs or live in a house with a low energetic quality. Before the higher energy prices of 2021-2022 about half a million Dutch household was energy poor. And almost half of all Dutch h households cannot participate in the energy transition in the built environment because they live in a poorly or moderately insulated house that they are unable to update due to a lack of financial wealth.
	(Feenstra et al., 2021)	The authors suggest that energy poverty is on the national agenda in the Netherlands, due to the requirements of the energy transition. However, vulnerable energy consumers have limited recognition in national policy, and some EU nations have disregarded energy poverty in their national energy and climate plans. The authors argue that the Dutch case presents an opportunity to integrate energy poverty with just energy transition policy developments. They suggest that In the Netherlands, where energy use is mainly considered a function of the free market, the framing of energy poverty through the just transition is more acceptable, and it opens up a window for political discussion of the issue. The integration of energy poverty with the energy transition agenda is a way to advance a multi-level energy governance endeavour and realize a national agenda.
	(Croon et al., 2023)	This paper discusses the importance of using more elaborate energy poverty gap indices to design and monitor effective energy poverty policies. It argues that existing indicators focused on the headcount ratio neglect the intensity and inequality of energy poverty. By considering poverty gaps, policymakers can make explicit welfare choices and target resources more accurately. The study uses microdata statistics on energy poverty in the Netherlands, demonstrating that spatial targeting based solely on incidence overlooks the depth of deprivation. Visualization techniques help comprehend different poverty orderings and compare time periods, regions, and subgroups. Further research should explore the driving characteristics of energy poverty and estimate positive poverty gaps to assess society's resilience.

Snowballing or added manually	(Jenkins et al., 2016)	One of the more influential papers in the lot is this paper, which is a conceptual review of energy justice. It argues that energy justice is a new area of crosscutting social science research that applies the principles of justice to the energy systems, including policy, production, consumption, activism, security and climate change. The framework is based on three core tenets: distributional, recognition and procedural justice. The framework offers opportunities to reveal where injustices might occur and develop new processes of avoidance and remediation of these injustices. It gives a good insight into the concept of energy justice.
	(Jenkins et al., 2021)	This paper writes about the concept of energy justice and how it has gained popularity in academic and political circles. However, it argues that there is a low reflection on the scope and contribution of existing research. This paper is tapping into this gap, as it utilised a systemic literature review of 155 peer-reviewed articles. It argues Energy justice can act as a tool to identify injustices and vulnerabilities and as a progenitor to create new research methods and themes. Energy justice should be considered a lever for action and community mobilization to transform global energy systems.
	(Kanger & Sovacool, 2022)	The authors argue that the energy transition has serious implications for justice. A comprehensive framework for energy justice in system innovation should consider multiple spatial scales, different time horizons, and connections to transition dynamics. This paper applies this framework to analyze the ongoing energy transition in Estonia and found 214 distinct incidents of energy injustices across 21 categories. The analysis revealed a dominance of national/regional and short-term anticipated injustices in media coverage. The study raises ethical questions about using probable yet unrealized injustices related to regime destabilization and niche acceleration as a means to perpetuate injustices related to the optimization of the currently dominant regime.
	(Heffron, 2022)	Heffron (2022), states that the topic of energy justice is gaining ground in energy research, and is increasingly applied to the energy transition. This paper is a review of 100 cases worldwide and shows that stakeholders have allocated rights and obligations and that the protection of these (human) rights is crucial for meeting energy justice.
	(Sovacool et al., 2017)	This article examines the concept of energy justice and its implications for decision-making in the energy sector. It argues for a more comprehensive approach that considers moral and equity dimensions. The article identifies six new frontiers for energy justice research, including non-Western perspectives, non-anthropocentric notions of justice, cross-scalar issues, business models, tradeoffs within energy justice principles, and unjust discourses. It proposes a conceptual framework consisting of ten principles and emphasizes the need for "justice-aware" energy planning and policymaking. The conclusion highlights the importance of considering social justice dimensions, beyond technical and economic aspects, in energy analysis and planning. The integration of justice principles can lead to a more equitable distribution of energy resources and services while minimizing environmental harm.
	(Chan & Delina, 2023)	This review article utilises a literature review to gain an understanding of energy poverty in Asia compared to the Global North. While energy poverty discourse in the Global North focuses on affordable cooling, studies on energy poverty in the Global South, particularly Asia, have received less attention. The review analyzes energy poverty studies in 23 Asian countries and territories, identifying emerging discussions and researchers through bibliometric analysis. The concepts of 'hidden energy poverty', 'urban energy poverty', and 'cooling poverty' are highlighted, suggesting areas for future research. The paper emphasizes the need to contextualize energy poverty as 'energy insecurity' and explores qualitative research, the just energy transition, and the impacts of climate change and rapid urbanization on energy poverty in the region.

Table 4: Summaries and boolean searches academic literature

Appendix B: Media Analysis

This appendix will contain all the information regarding the media analysis, including the boolean searchers, search engine, which new paper is used, citations and statements derived from these articles. The goal is to understand different perceptions of the citizens in the Rotterdam- The Hague area regarding the RES and the energy transition.

Boolean	Source	Summary
"Energy transition" AND "Energy poverty"	(Van de Hulsbeek, 2022)	The Alderman responsible for the energy transition in the four major cities in the Netherlands find the national government's decision to make hybrid heat pumps the standard from 2026 a good interim solution. Appreciating the government's clarity, but point out that a heat pump is not the right solution for many urban residents. They believe that a collective solution such as a connection to a district heating network remains the most feasible and affordable option for the future. The goal of the government is to have 1.5 million homes off the gas by 2030 and all 7.5 million homes and 1 million buildings by 2050. However, the aldermen face challenges like funding, resources, and authority. They state the need for affordability and express concerns about rising energy poverty. They also highlight the shortage of skilled personnel and the need for adequate implementation at the municipal level. The Alderman supports the legislation for gas-free neighbourhoods, however before setting a deadline there need to be affordable alternatives and funding for these projects
	(NOS, 2022)	According to a report written by De Nederlandsche Bank (DNB), one in five homeowners cannot afford to make their homes more sustainable. The report shows that they do not have enough savings, and granting loans is not an option for this group, as the interest could be problematic. These homeowners are particularly affected by high energy prices, as they have poorly insulated homes and relatively low incomes. Furthermore, the current subsidy schemes for sustainability are not considered a viable solution for this group. The Dutch government aims to have 1.5 million homes off the gas by 2030, which needs investments in insulation and heat pumps, averaging €24,000 per home. Around 21% of homeowners cannot afford these costs. DNB suggests that solutions should focus on identifying and addressing the needs of the most vulnerable homeowners, but there is no solution yet.
	(Van der Velden, 2019)	Delft's transition away from natural gas will take time, according to GroenLinks alderman Stephan Brandligt. Critics have expressed concerns about the pace of the city's ambitions, but Brandligt emphasized that Delft has been working on the energy transition for twenty years. He highlighted initiatives such as gas-free housing in the Zuidpoort area, the use of waste heat in the Harnaschpolder, and the construction of energy-neutral homes in the Schoemaker Plantage. Brandligt also mentioned plans to use excess heat from the petrochemical industry to heat thousands of Delft homes. He acknowledged the challenge of balancing costs and benefits and emphasized the importance of public participation and energy efficiency.
	(Broeken, 2023)	The municipality of Gorinchem, housing corporation Poort6, and the tenants' association HP6 have signed an agreement to collaborate on creating a safe, livable, and caring city. They will work together to address energy poverty, provide information on the transition to a gas-free Gorinchem, and maintain clean and safe neighbourhoods through initiatives like "Hart voor uw wijk" (Heart for your neighbourhood). Additionally, they plan to conduct a housing market study to better understand the changing market and explore options for housing mobility.

	(Van der Krol, 2022)	Many households in poorly insulated social housing in the Dordrecht region will continue to face high energy bills for years to come, despite the priority given to sustainability by housing corporations. Limited funding, contractor availability, and material shortages are cited as reasons for the slow pace of renovations. Residents are requesting improvements, but housing corporations are unable to address all the demands simultaneously. Efforts are being made to prioritize the most in-need properties and explore suitable measures, but the process is time-consuming. The impact on residents is significant, but the renovations aim to provide improved living conditions and energy efficiency in the long run.
"Citizen participation" AND "energy transition"	(Klusens & Van Der Wel, 2023)	The winners of the energy transition are the richer citizens, while energy poverty continues to worsen. The authors argue that the gap needs to be addressed. The current energy policy, exemplified by the soldering scheme for solar panels, disproportionately benefits the wealthy. This disparity in the distribution of benefits and the widening gap between winners and losers of the energy transition are well-known issues. The activation policy implemented by the government further exacerbates the division, as it relies on subsidies that are often difficult to access and require upfront investment. The authors propose a policy of "ontzorging" (carefree support) specifically tailored to disadvantaged households, offering proactive assistance and focusing on significant interventions. This approach aims to bridge the gap and address the realities faced by marginalized groups, instead of relying solely on generic measures and compensations.
	(Provincie Zuid-Holland, 2023)	A recent TNO study shows that in 2022, over 600,000 Dutch households were living in energy poverty, facing high energy costs, low incomes, and residing in poorly insulated homes. The Inclusive Energy Transition program of the province of South Holland aims to make the energy transition achievable and affordable for everyone, including those in vulnerable positions. The program combines research, knowledge-sharing, and policy development to help more households affected by energy poverty. The province plays a role in inspiring, connecting, and building partnerships to ensure that the energy transition is accessible to all and that initiatives are inclusive and fair.
	(De Wilde, 2021)	The author criticizes the initiative of the city of Amsterdam to organize a citizen's assembly on energy transition, questioning its effectiveness and legitimacy. They argue that it is too late for such an assembly and emphasize the importance of early involvement and building knowledge. The author highlights the lack of a clear mandate and budget approval from the city council, suggesting that the promises made to implement ideas from the assembly may be empty. They express concern about potential manipulation and a lack of trust from citizens due to past experiences of ineffective participation processes. The article concludes by urging consistency and careful consideration of the connection between direct participation and representative democracy.
"participation" AND "energy transition"	(Nwosu, 2022)	The article discusses the importance of participation and avoiding polarization in municipal energy transition projects. The Vereniging van Nederlands Gemeenten (VNG) and the Nationaal Programma Regionale Energiestrategie (NP RES) provide an introductory program for council members, aiming to create support and limit resistance in sustainability projects. Key elements for achieving participation include effective communication, timely information, procedural justice, a diverse participation mix, clear commitment, and fair distribution of benefits and burdens. The article also emphasizes the value of local ownership and collaboration to increase participation rates. The role of polarization in discussions and strategies for engaging different perspectives are highlighted.
	(Provincie Zuid-Holland, n.d.)	The province of Zuid-Holland supports energy projects of residents to ensure accessible and affordable clean energy for everyone. They provide financial support, knowledge exchange, and research to help residents take part in the energy transition and have more control over local sustainable energy. The province offers funding for local initiatives in the preparation and research phases of projects related to heat, solar energy, storage, and regional collaborations. They also promote learning from each other through collaborations with energy cooperatives and initiatives in the region. Additionally, the province conducts

		research and provides advice on promoting local ownership and financial participation in energy projects.
	(Hofstede & Van Bree, 2023)	The municipality of The Hague is struggling to engage residents and involve them in decision-making processes regarding the energy transition and home insulation, according to the Den Haag Rekenkamer (audit office). Although the municipality makes efforts to include residents in discussions, their input does not seem to translate into decisions or plans, leading to confusion and frustration. The audit report suggests that unclear rules and insufficient communication about the use of residents' input contribute to the problem. The lack of transparency regarding the impact of residents' contributions on decision-making further exacerbates the issue. The audit office recommends that the municipality establish clear participation conditions and communicate the outcomes to residents. The municipality acknowledges the findings and emphasizes the ongoing improvement of participation processes.
"energy inequality"	(König, 2018)	GroenLinks Rotterdam's leader Judith Bokhove believes that achieving an energy-neutral city by 2030 is realistic. The party aims to secure six seats in Rotterdam and has outlined plans for an autoluw (car-light) city centre, with car-free streets and improved public transportation. Bokhove also emphasizes the need for addressing energy inequality, suggesting measures like providing free electricity for people living in social housing. GroenLinks aims to promote mixed-income neighbourhoods in schools and prioritize affordable housing. Bokhove also highlights the importance of assisting homeless individuals and providing more privacy in shelters. Finally, she criticizes the idea of profiling youth based on their clothing choices, opposing Leefbaar Rotterdam's approach.
"protest" AND "energy transition"	(De Bruijn et al., 2023)	The energy transition in the Netherlands is hindered by conflicting interests, inadequate development of green energy, and a lack of commitment to nuclear power. To reduce energy consumption, significant actions are required, such as closing regional airports, improving transportation systems, and reducing the number of cars. However, the government lacks vision and leadership. The transition encompasses societal changes impacting housing, food, work, and investments. Tailored communication and long-term policies are necessary, but the Netherlands faces challenges due to population density and European-level coordination. Without a clear plan and non-political oversight, the transition will continue to stall, jeopardizing the 2040 goals.
	(Knook, 2022)	A group of dissatisfied students gathered in Breda's Grote Markt to protest against the rules regarding energy subsidies. They demand equal opportunities and compensation for rising energy costs for all students, regardless of age or income. The protesters engaged in conversations with the community and passersby, hoping to be heard by the local government, which was discussing the energy transition that evening. Some students expressed concerns about the complicated and unfair requirements for applying for energy subsidies, and others highlighted the financial struggles they face, with some being forced to return to their parents' homes due to affordability issues. The protesters called for clearer rules and the elimination of special assistance programs.
	(Van Rijsingen, 2021)	Protests against the placement of wind turbines and solar parks are occurring across the Netherlands, but there is a solution: the citizens' assembly, according to Eva Rovers. The assembly involves a randomly selected group of people representing a cross-section of society, engaging them in the decision-making process at an early stage. This approach aims to create support and acceptance for the energy transition. By involving citizens from the beginning and considering alternative options, such as rooftop solar panels, communities can better understand and participate in the decision-making process. The use of citizens' assemblies has been successful in various regions and countries, leading to inclusive policies, increased trust in the political system, and the mitigation of polarization and misinformation.

"energy transition"	(Bral, 2023)	A recent investigation by the Rekenkamer (Audit Office) reveals that the municipality of The Hague is failing to effectively involve its residents in the energy transition process. The municipality initiated seven different projects without proper coordination, resulting in a lack of meaningful citizen participation. This has led to frustration among residents who are interested in engaging with the energy transition plans. The Rekenkamer emphasizes the importance of creating public support and urges the municipality to improve its approach and provide clearer feedback to residents' input. The column highlights the need for effective citizen involvement and suggests that the municipality needs to work quickly to gain public support for the energy transition.
"energy inequality" AND "energy transition"	(ANP, 2022)	The growing gap between affluent households and those with lower incomes in terms of benefiting from government measures to promote energy transition is creating an "energy divide," according to experts. Wealthier homeowners have been more successful in making their homes energy-efficient, thanks to their financial resources and access to government funding. However, this has led to an increasing disparity between the rich and the poor. While solar panels and heat pumps are seen as effective tools to reduce energy costs, their effectiveness diminishes during winter months when they generate less energy. This discrepancy highlights the need to address the energy inequality issue and ensure that all households can participate in the energy transition.
	(Movisie, 2021)	The concept of energy poverty, defined as high energy costs combined with low income and living in poorly insulated homes, has gained attention in the Netherlands. A TNO report revealed that half a million households in the country suffer from energy poverty. While the government plans to provide a €400 compensation to all households, it is seen as a mere Band-Aid solution. Furthermore, the slow progress in making social housing gas-free and the increasing costs of fossil fuels exacerbate energy poverty and create a divide between those who can afford sustainable investments and those who cannot. The lack of a fair and comprehensive approach to the energy transition risks undermining societal support for climate action. A focus on climate justice and targeted policies could address energy poverty more effectively.
	(Verseput, 2022)	Illustrator and researcher Maria Fraaije aims to make the energy transition more diverse and inclusive through an open, online image bank called "Beeldkracht." Fraaije was frustrated by the lack of relevant images representing the energy transition, which she believes is currently dominated by a white, highly educated perspective. The image bank will feature diverse illustrations and photos to address this imbalance and show the broader implications of the energy transition. The goal is to have at least 40 illustrations and 150 photos available by the end of the year, accessible to anyone.
"energy inequality" OR "Energy Poverty" AND "The Hague"	(Harmsen, 2022)	The level of assistance provided for energy poverty depends on where you live. While more municipalities are offering help to residents affected by high energy prices and inflation, the extent of support varies significantly between places. This disparity creates inequality, as some municipalities provide more assistance than others. One visible example is the energy supplement, where different municipalities determine the eligibility criteria and the number of recipients. The variations arise from practical considerations and policy choices, leading to concerns about the increasing differences between municipalities and the potential for people to fall through the cracks.
	(Ketelaar, 2022)	Residents of the affluent Statenkwartier neighbourhood in The Hague, Netherlands, are donating their energy bonuses to help their less fortunate neighbours. While everyone in The Hague receives a €190 energy compensation from the government, not everyone needs it. A group of Statenkwartier residents decided to collect and donate their bonuses to help residents of the much poorer Moerwijk neighbourhood with home insulation. The initiative aims to address energy poverty, improve living conditions, and provide immediate assistance to those in need. The donations are being channelled through the Moerwijk Energy Cooperative, which collaborates with local organisations to identify individuals who require urgent insulation support.

	(Potters, 2022)	The municipality of Capelle aan den IJssel in the Netherlands has announced a winter offensive against energy poverty. With over €1.2 million at its disposal, the city aims to help residents facing difficulties due to high gas and electricity bills during the cold months. The funds will be used to assist low-income households with poorly insulated homes. Installers will be sent into neighbourhoods to provide support and advice on energy-saving measures, such as installing insulation, radiator foil, draught strips, water-saving showerheads, and LED bulbs. The initiative also includes provisions to support homeowners and collaborate with housing associations to tackle the issue on a larger scale. Additionally, the municipality is working with the Dutch Debt Assistance Route to identify and assist residents facing financial problems.
	(Fit, 2021)	The article discusses the issue of energy poverty in the Netherlands as gas prices soar. Many households with low incomes are struggling to afford the high energy costs, leading to inadequate heating and discomfort. The rising gas prices, coupled with poor insulation in many homes, are causing energy bills to increase significantly. Research shows that around 550,000 households in the country suffer from energy poverty, either due to low income or living in poorly insulated houses. The article highlights the challenges faced by individuals living in energy poverty and the role of housing corporations in addressing these issues.
	(Den Haag FM, 2022)	The Hague municipality in the Netherlands will provide around 100 euros to low-income residents to assist with increasing energy costs, in addition to the national government's planned support for households facing energy poverty. The funds aim to be distributed by April 15th, targeting individuals with the Ooievaarspas and those with incomes below 130% of the social minimum. The municipality will supplement the government's one-time payment of 200 euros with an additional 100 euros to reach a total of 300 euros per household. The remaining TONK funds will be used for this purpose. The government also plans to offer an energy tax discount and allocate funds for home sustainability.
	(Lammers, 2022)	The Dutch government hesitated for months to address energy poverty but is now hastily considering measures to assist struggling households. The rising energy prices have made it increasingly difficult for many households to pay their bills and afford daily necessities. Despite warnings from the Central Planning Bureau that hundreds of thousands of households would face financial hardship, the government believed it had already provided sufficient support. However, with the realization of the severity of the crisis, the government is now exploring options such as establishing an emergency fund and providing free breakfast for children in impoverished areas. Critics argue that the government's response has been too slow and that preventative measures should have been taken earlier.
	(Bekkers, 2022)	Municipalities in the Netherlands are seeking compensation from the government to combat energy poverty. The Association of Dutch Municipalities (VNG) is calling for the expansion of individual exceptional assistance to help middle-income households affected by the inflation crisis. The VNG emphasizes that the government should compensate municipalities in order for them to provide assistance to residents facing financial difficulties due to rising inflation. They propose measures such as early intervention, debt prevention, and extending exceptional assistance to include middle-income individuals. Municipalities also suggest local initiatives such as food banks, emergency funds, and support for energy conservation and home sustainability.
("Windenergy" OR "Windturbines") AND "Conflict"	(Omroep West, 2017)	Resistance against a large wind turbine near the A4 highway in Leidschendam-Voorburg has spread to The Hague City Council. The coalition parties, VVD and CDA, are eager to get rid of the controversial structure located just over the border with Leidschendam-Voorburg. The PVV party is entirely against wind turbines and also demands its removal. Residents expressed their opposition during a committee meeting, highlighting issues such as light, shadow, noise, and a bothersome low-frequency hum caused by the turbine. Many council members criticized the lack of consultation with residents during the installation process. The municipalities of The Hague and Leidschendam-Voorburg have admitted the communication failure and a specialized agency will conduct a study on the

		noise pollution. The dissatisfaction among politicians is growing, with some calling for the turbine to be removed promptly and others suggesting the possibility of temporarily shutting it down. The Zeeheldenbuurt neighbourhood in Leidschendam hopes for a joint fund between the municipalities to cover the costs of dismantling the turbine.
	(Teitsma, 2019)	Over 100 additional compensation claims have been filed by residents of Geervliet and Heenvliet due to the nuisance caused by eight wind turbines located behind their houses. These claims come after the Council of State ruled last month that Rotterdam had offered insufficient compensation in nine test cases. Rotterdam considered the turbines on the edge of its territory as a "social risk," which the highest administrative court deemed incorrect. The claims will be forwarded to the advisory firm SAOZ for assessment, and the expectation is that the amount of compensation paid by Rotterdam will increase significantly. Additionally, a separate fund of €1.1 million will be established for the benefit of Geervliet and Heenvliet to enhance sustainable living conditions in the area.
	(Teitsma, 2017)	The political decision in Rotterdam not to provide compensation to residents of Geervliet and Heenvliet, who have been suffering from the presence of eight wind turbines behind their houses for years, has angered the council members in the neighbouring municipality of Nissewaard. In a "motion of disappointment," the Nissewaard council unanimously criticized Rotterdam's decision and called on them to compensate the affected residents for the inconvenience caused by the tall turbines. Despite recommendations from advisory firm SOAZ to pay compensation, Rotterdam disregarded the advice, stating that the residents have been facing the view of high factory chimneys in the Botlek area behind the wind turbines for years. The Nissewaard council believes that the established area fund for livability in the two villages should be used to remove the two most noisy or even all of the wind turbines, along with providing compensation. However, the cost of relocation is expected to be higher than the available funds, and wind park operator XL Wind is not willing to cooperate.
	(Ekker, 2020)	The preliminary plans from 24 out of 30 energy regions in the Netherlands show a greater preference for solar energy over new wind turbines, according to the National Program of the Regional Energy Strategies (RES), in response to inquiries from NOS. If these proposals are implemented as planned, the ratio between wind and solar energy in the country will significantly shift from 60% wind and 40% solar to 20% wind and 80% solar. However, this shift raises concerns about the need for additional infrastructure and its impact on public support. The RES also highlights the importance of spatial integration, grid impact, and stakeholder engagement in these plans.
	(Vlaardingen, 2023)	Construction of the wind turbines at 't Scheur in Vlaardingen has begun, marking a significant step towards clean energy in the city. The Vlaardings Energie Collectief (VEC) played a key role in realizing this project, with the support of the municipality. The VEC partnered with De Windvogel, an experienced wind energy cooperative, for the implementation. The construction process involves the assembly of parts on-site, including the placement of reinforced concrete foundations and the erection of the mast. If all goes according to plan, the turbines will start operating in early 2024, providing over 18,000 MWh of electricity annually, enough to power around 7,000 households in Vlaardingen. The VEC emphasized the importance of continued innovation, collaboration, and the normalization of sustainable energy to combat climate change.
Snowballing	(Blom et al., 2019)	The majority of municipalities in the Rijnmond region have little idea how to approach the energy transition, which involves reducing CO ₂ emissions by 50% by 2030, according to a study by AD and RTV Rijnmond. The investigation revealed that most municipalities lack concrete objectives for the current period, and some are unaware of their own energy consumption and the number of officials involved in the energy transition. While Rotterdam stands out with a substantial investment in the energy transition, many municipalities lack originality in their climate policies. The absence of specific goals and targets poses a significant challenge to the effective implementation of climate policies.

	(Het Kontakt, 2023)	The municipal council of Krimpen aan den IJssel has approved an action plan to address energy poverty, allowing the municipality to proceed with its implementation. The council had allocated over two million euros last year to tackle energy poverty. The plan consists of measures to directly assist people in poverty and long-term strategies to reduce energy costs. It includes initiatives such as installing additional solar panels for QuaWonen renters, assisting homeowners with energy-saving measures, replacing inefficient appliances for low-income residents, and expanding support programs for those in need. The municipality will reach out to eligible residents to inform them about the available measures.
	(Hoets, 2021)	Approximately 550,000 households in the Netherlands are living in energy poverty, facing high energy costs, poorly insulated homes, and low incomes. The rising gas prices and the upcoming winter are expected to worsen their situation. Energy poverty is also significant in the Rijnmond region, with the Schelluinsestraat neighborhood in Gorinchem topping the list. TNO suggests interventions at the neighborhood level by the government, municipalities, and housing corporations to reduce energy consumption. The government could provide financial support, while behaviour changes and home improvements are also measures that should work.
	(Brouwer, 2022)	Tens of thousands of people in the Netherlands have not applied for the government's one-time energy compensation due to a lack of awareness or difficulty in the application process. Rotterdam, Amsterdam, and The Hague have the highest number of households yet to receive compensation for their high energy bills. While municipalities are primarily responsible, the Ministry of Social Affairs and Employment is assisting by urging organizations to promote the possibility for compensation. Around 1 million households are eligible to get the compensation, 85% of these in the large cities have applied.
	(Voermans, 2023)	A recent study by TNO based on data from the Central Bureau of Statistics reveals that over 600,000 households in the Netherlands are living in energy poverty. Despite financial compensation measures, the number of households experiencing energy poverty has increased by 90,000 compared to a year and a half ago. This situation particularly affects families with children. The financial support measures have prevented around 400,000 households from falling into energy poverty. However, low-income families living in poorly insulated rental homes still struggle to afford heating and go to cost-saving measures like not using heating or warming up food. These households face difficulties in escaping energy poverty, and improving the energy efficiency of the worst-rated rental homes is seen as the solution to help.

Table 5: Summaries and boolean searches Media analysis

Appendix C: Interview Protocol with decision-makers

Introduction

Welcome the participant and thank him/her for their time. The interview will last for about an hour.

Introduction yourselves and explain the goal of the research and the interview. Also, explain the exploratory character and the difference between the research of Olaf and Sybren. Also state the research questions:

Olaf: "How can fair participation in the Regional energy strategy Rotterdam- the Hague be stimulated with a framework that incorporates energy justice and energy poverty?"

Sybren: "How do the local and regional governmental bodies deal with the energy transition with regards to Energy justice and energy poverty?"

Explain the confidentiality and anonymity of the answers given by the participant and hand the consent form and ask for their consent to record the interview.

The decision-making process within the RATHER

1. How are you involved within the RATHER and what is your role in the decision-making?
2. How are you contributing to the decision-making and which challenges and successes did you experience in your role?
If not involved: Move to perception on RES, EJ, EP & Framework.
3. How do you experience the influence of political volatility on the creation and execution of energy policy within the RATHER, keeping energy justice, energy poverty and citizen participation in mind?

Deelname aan de RATHER

4. How does your organisation organise citizen participation?
5. What are the successes and hurdles for participation?
6. How do you think citizen participation is organised on a regional level?
7. Do you think that all groups of people (namely the energy poor) are adequately involved in this participation process?
8. Are there any improvements to be made to make the energy decision-making more fair for (energy-poor) citizens?
9. Are the meetings in the RATHER accessible for citizens or are they involved in one of these?
10. What are the barriers to citizen participation (namely focussed on energy-poor groups)?
11. How do you think that knowledge about organising participation is shared within the region?
12. Is this something that could be improved and if yes how?
13. How do you see that the capacities of the different municipalities have an effect on the organisation of citizen participation?
14. Do you think that this could be improved and if yes how?

15. How do you think that academic research could help involve citizens more in these processes?
16. Would a regional framework, with tips, tools and guidelines for fair participation, be of valuable to you? Why (not)?
17. What are aspects to be ought to be taken into account when setting up such guidelines/framework?
18. Which factors could enhance/discourage the usage of such framework/guideline?

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19. Which groups of citizens could, according to you, experience more difficulties in the energy transition? E.g. Energy poverty, environmental impact, etc.
20. Is it difficult to engage these groups (including energy poor) and how is this currently done?
21. How do you make sure that these groups are not disadvantaged due to the energy transition?
22. We have also often heard that energy-poor households often don't have the mental space to apply for benefits, for example, or participate in participation trajectories at all. How do you see this and how do you deal with it?
23. How do you see the gap between rich and poor widening due to the current way in which the energy transition is being shaped within the region?
24. What do you think is a fair energy transition, taking into account energy-poor households?
25. (How to) Can energy-efficient households be better included in the transition?
26. How has this approach worked out in practice? Can you give examples of successful or failed attempts at citizen participation and why they were successful or not?
27. How is citizen participation included in the development of RES2.0 and how does it differ from RES1.0?
28. How do you see local ownership and how is it applied?
29. How would you describe the difference in regional participation compared to local participation?
30. Where do you see any shortcomings of the current 'handbooks' for citizen participation from the RES?
31. What do you think of this type of document?
32. What is your view on societal conflicts related to the energy transition and how do you think this affects decisions for organising participation?

Appendix D: Interview Protocol with Citizen Representatives

Introduction

Welcome the participant and thank him/her for their time. The interview will last for about an hour.

Introduction yourselves and explain the goal of the research and the interview. Also, explain the exploratory character and the difference between the research of Olaf and Sybren. Also state the research questions:

Olaf: "How can fair participation in the Regional energy strategy Rotterdam- the Hague be stimulated with a framework that incorporates energy justice and energy poverty?"

Sybren: "How do the local and regional governmental bodies deal with the energy transition with regards to Energy justice and energy poverty?"

Explain the confidentiality and anonymity of the answers given by the participant and hand the consent form and ask for their consent to record the interview.

Knowledge level of the RES and Energy Transition

1. What is your role in your organisation and are you active in the RETHER or the Energy transition?
2. If not involved in the RETHER: Do you know about the existence of the regional energy strategy?
3. How do you see energy transition being shaped within the district you work in?

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1. Are you involved in the energy transition?
2. What are citizens' views on the energy transition and how do they make them heard?
3. Do you see any problems with the energy transition and how are they being addressed?
4. Do you see a lot of energy poverty in your neighbourhood?
5. What kind of people are among this group? E.g. elderly, students, etc.
6. How is the energy transition experienced by citizens, looking at subsidies, prices, political choices and behavioural change?
7. Do you think the municipality recognises this problem?
8. Where can citizens go to raise these issues?
9. Do you think the municipality also recognises these problems?
10. How are these people being helped?
11. What measures are being taken by the state, the region and the municipality to help these people?
12. Are these measures reaching all people in this group?
13. Do people find it difficult or hassle to apply or use these measures?
14. If there are energy projects; are citizens properly involved in these?
15. Are citizens interested in the energy transition and would they like to participate in the decision-making process (or have the mental capacity to participate)
16. How are citizens involved in the energy transition? Are all groups involved?
17. Do energy-poor people have the space and time to participate in these kinds of processes?
18. Are there any improvements that the municipality could make to help energy-poor people?

Appendix E: Participants of Interviews

Participant	Function	Organisation
1	Alderman	Middle-large municipality
2	Consultant	Province of South-Holland
3	Civil Servant	Middle-large municipality
4	Civil Servant	Province of South-Holland
5	Civil Servant	Middle-large municipality
6	Civil Servant	Middle-large municipality
7	Consultant	NP RES
8	Civil Servant	Large Municipality
9	Civil Servant	Waterboard
10	Director	Energy Cooperation
11	Alderman	Middle-large municipality
12	Civil Servant	Middle-large municipality
13	Alderman	Middle-large municipality
14	Alderman	Large Municipality
15	Civil Servant	Middle-large municipality
16	Alderman	Middle-large municipality
17	Employee	Societal organisation
18	Alderman	Middle-large municipality
19	Director	Energy Cooperation

Table 6: Participants and their organisations