

An explorative study on the role of justice in the Dutch energy transition strategies: Insights from the actors of the Twente energy region

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2021/2022

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Abstract

Following the goals agreed upon in the Paris Agreement to limit global warming to below two degrees Celsius, the Netherlands has set ambitions to address the effects of climate change with the National Energy and Climate Plan. To achieve climate goals, phasing out fossil fuels and introducing more renewable energy to the energy mix is essential. However, as assessed by the European Commission, the Dutch energy transition has not advanced as smoothly as needed from a justice perspective. In this thesis, the role of justice in the Dutch energy transition strategies was scrutinised by exploring perceptions of actors within the Twente energy region about the topic. Using an interpretive research approach, research data was generated through participatory observations and semi-structured interviews using the ordinary language interviewing method, then analysed using qualitative content analysis. Topics were analysed closely based on the language used by interviewees and using energy justice and adjacent concepts as sensitising concepts. The results showed that there is a homogenous trend of perceptions among the interviewees regarding justice and its role in the Dutch energy transition strategies. A key finding was that justice considerations are embedded in energy policies to a low extent, with the affordability of the energy transition and accessibility of financial instruments being prominent justice concerns. Finally, this report was concluded with several policy recommendations for the Dutch government on promotion of an energy transition that is more just.

Keywords: Energy transition; Energy justice; Sensitising concepts; Ordinary Language Interviewing

Acknowledgements

I would like to express my deepest gratitude to my supervisors, Dr. Ewert Aukes and Prof.Dr. Michiel Heldeweg for their guidance and support throughout my research process.

Special thanks to my first supervisor Dr. Aukes who was consistently encouraging and whose invaluable feedback helped me develop and improve the contents of this thesis. I must not forget to mention here that our discussions got me to really appreciate the intricacies of different research methodologies. Thank you for the many interesting articles and the reminder that the reading and learning never ends.

Of course, this thesis was only made possible because of all the people who participated in the interviews and shared their thoughts and experiences with me. I am immensely grateful for all the opportunities and people I have met along the way.

Last but not least, my sincerest thanks to friends and family who have supported me and given me the strength and motivation to finish this thesis. Thank you to those who read my writing and provided feedback, and thank you all for the great conversations.

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List of abbreviations

CBS	Centraal Bureau voor de Statistiek [Statistics Netherlands]
EU	European Union
EZK	Ministerie van Economische Zaken en Klimaat [Ministry of Economic Affairs and Climate Policy]
IPCC	Intergovernmental Panel on Climate Change
NECP	National Energy and Climate Plan
NIMBY	Not In My Backyard
NPRES	National Program Regional Energy Strategies
PBL	Planbureau voor de Leefomgeving [Netherlands Environmental Assessment Agency]
RES	Regional Energy Strategies

1. Introduction

The increasing climate variability poses a threat to human wellbeing and the earth's ecosystems, and there is proof again in the recent climate report released by the Working Group II of Intergovernmental Panel on Climate Change (IPCC) concerning the increasing projected climate risks (IPCC, 2022a). Besides the global climate crisis, increasing geopolitical concerns whereby Russia is weaponising its dominance over the European gas supply for political means also highlight the vulnerability of the current global energy mix (Harvey, 2022). Accordingly, Secretary-General of the United Nations António Guterres had called for the urgency to phase out fossil fuels and repeated that a prompt and well-managed energy transition to renewables is the sole pathway to global energy security (United Nations, 2022). To clarify, transitioning to low- or zero-carbon energy sources as a mitigation strategy for climate change is not new, but the urgency is increasingly pressing as there is more evidence on reaching the climate overshoot if no immediate actions are taken (IPCC, 2022b).

Although alternative sources of energy have become more readily available, the lack of large-scale deployment of these energy sources reveals the immense challenge of an energy transition. To understand this, transition scholars have begun to discuss the variety of transition pathways (Geels and Schot, 2007). In fact, scholars are increasingly paying attention to the implications of the energy transition with questions regarding the distributional consequences of the transition (Arora and Schroeder, 2022). In the Netherlands, for instance, there is a growing debate surrounding the effects of the energy transition on the citizens' living environment and concerns about roles and responsibilities of different actors (TNO, n.d.). Moreover, as more social actors call for the need for system change to address the injustice of climate change and energy system (Sovacool et al., 2022), it is clear that discussions about sustainability transformations need to go beyond technical feasibility as they also pertain to the domain of justice, equality, and fairness (Arora and Schroeder, 2022). Therefore, while the arguments in favour of a transition away from fossil fuels are compelling, the implementation of this transition is still lacking due to layers of complexity, and among them is marginalised communities' quest for energy justice (Alford-Jones, 2022).

According to the growing literature, a crucial factor in the planning and implementation of an energy transition is the active consideration of justice issues and equity implications of

transition pathways (McCauley and Heffron, 2018; Haarbosch et al., 2021). Researchers have shown that the lack of consideration of justice concerns can undermine energy transition efforts, causing delays or abandonment of renewable energy projects (Alford-Jones, 2022). Taking the case in the Netherlands as an example, disapprovals and conflicts from local communities regarding the implementation of wind energy projects are prevalent due to insufficient recognition of local spatial planning (Breukers and Wolsink, 2007). On the household level, the crossover of social and energy injustices surfaces in the examination of people's access to affordable and comfortable indoor temperatures (Bartiaux et al., 2018) and the challenge of retrofitting measures for energy inefficient housing (Gillard et al., 2017). In this regard, I concur with McCauley and Heffron (2018) that a proper energy transition cannot be realised without a clear approach to address energy justice.

1.1 Context

In 2019, member states of the European Union (EU) had submitted their final national energy and climate plans (NECPs) to be assessed by the Commission (European Commission, n.d.). The NECPs were outlined with the intention that each member state addresses their action plans in accordance with the Paris Climate Agreement to reduce greenhouse gas emissions and limit global warming to less than two degrees Celsius above pre-industrial levels. To limit the scope of the study, I focus on the NECP of the Netherlands and the Dutch national goal to achieve 27% for renewable energy contribution to the 2030 target (EZK, 2019). Based on the Commission's assessment of the Dutch NECP, an important finding that built the foundation of this research is that the Netherlands had only "partially addressed" justness and fairness aspects of the transition to a climate-neutral economy, especially with their limited specification on the analysis of policy impacts and measures on social coherence (European Commission, 2020, p. 6).

To achieve the long-term reduction targets, the national program of Regional Energy Strategies (RES) is one of the efforts proposed and established in the Dutch Climate Agreement which forms the basis of the NECP. Covering 30 energy regions based on geographical proximity, the RES was initiated to steer the energy transition towards a more decentralised system (van Dijk et al., 2022). The specific goals include: generation of 35TWh renewable electricity on land by 2030, the heating transition from fossil fuels to sustainable sources in the built environment, and to realise the needed energy infrastructure and storage (EZK, 2019). With the recognition that an

energy transition is not limited to a municipal boundary, the organisation of the RES allows local governments, businesses, residents, and other relevant actors to collaborate and share knowledge with the intention to achieve unified climate ambitions (NPRES, n.d.). This is extremely relevant because significant local opposition against renewable energy projects are still being reported (Lovatt, 2022). Hence, there is great potential that RES could be utilised to embed a process of effective participation and therefore improve community support for the transition process (EZK, 2019). However, it should be noted that the development of RES projects is still in its infancy. Due to the new approach of organisation where different governance levels (i.e., national, province, municipality) have to coordinate and align governance processes to accelerate the energy transition, researchers have identified numerous obstacles which have proven that the RES still needs to mature (van Dijk et al., 2022). Therefore, it was expected that there is relevance to exploring the thesis in one of the energy regions.

1.2 Contribution

The body of literature in energy transition studies is extensive and continues to grow, reflecting a collective interest to address the complex facets of the energy transition. However, there are still innumerable gaps in the understanding of the possible drawbacks associated with the energy transition (Carley and Konisky, 2020). As more energy projects which are planned to realise the energy transition are being delayed or cancelled due to various barriers (Sovacool et al., 2022), the study of energy justice in particular has acquired prominence as scholars investigate the role of justice in the transition. Currently, a large amount of existing literature (to date and to my knowledge) has taken a more normative approach to investigating the role of governance instead of exploring the perceptions of these actors (Alford-Jones, 2022; Arora and Schroeder, 2022; Carley and Koninsky, 2020). In this paper, I present an empirical study that examines actors on their ideas of the energy transition and discuss how perceptions of justness have emerged in the organisation of the Dutch energy transition strategies.

In the attempt to understand the energy transition phenomena in the Netherlands especially pertaining to contestations against renewable energy initiatives, my research objective is to study the relevance of notions of energy justice and adjacent concepts in the Dutch energy transition strategies by exploring the perceptions of governance actors. By investigating existing theories and comparing them to topics raised by actors about the Dutch energy transition, I aimed to make

conceptual contribution by learning how the energy transition plays out on the local level in terms of justness and drawing conclusions on how to improve the justness of the transition. The core question which guided the research is: “*how do actors in the Twente energy region perceive the justness of the energy transition in the Netherlands?*”. To answer this question, an interpretive research approach was taken which contextualised and identified present challenges of justice practice in the Dutch energy transition. Primary data was generated in the Dutch energy region of Twente and analysed using the qualitative content analysis method.

2. Theoretical framework

In this section, the theories that lay the foundation of the study are first introduced. Besides energy justice, adjacent concepts such as “energy poverty in the Netherlands”, “Not-In-My-Backyard”, and “citizen participation” are also included because they serve as background ideas which complement the energy justice literature for the analysis of research data. Finally, this section is concluded by bringing together abovementioned concepts and showing that they function as sensitising concepts for the rest of the thesis.

2.1 Energy justice

The concept of energy justice emerged within the field of energy studies and social science to comprehend and address complex social and moral values that arise from the changes in energy systems (Milchram et al., 2018). Drawing from the pioneering work by McCauley et al. (2013) and the United Nations Sustainable Development Goals, energy justice refers to an overarching concept that addresses the fairness of the energy system with the goal to provide all individuals with affordable, reliable, and sustainable energy.

According to the comprehensive review of energy justice literature by Lacey-Barnacle et al. (2020) and Jenkins et al. (2021), the three-tenet framework is the dominant approach in the field. McCauley et al. (2013) proposed this triumvirate approach which addresses the three core themes of energy justice that is the considerations of distributional, procedural, and recognition justice within the energy system. First, distributional justice concerns the outcomes of the energy sector and brings up the questions surrounding fair allocation of both benefits and burdens as well as the associated responsibilities throughout the social hierarchy (McCauley et al., 2013). Second, procedural justice focuses on the legal process of decision-making and calls for an equitable procedure that engages all stakeholders in decision or action making (Heldeweg and Saintier, 2020). Finally, recognition justice acknowledges the specific needs of particular marginalised groups and aims to recognise the diverse perspectives and individual dignity of all individuals (Honneth, 2004).

Arguing to go beyond theory and to utilise energy justice as an analytical and decision-making tool, Sovacool and Dworkin (2015) presented an eight-core principles framework centred on (1) availability, (2) affordability, (3) due process, (4) good governance, (5) sustainability, (6)

intergenerational equity, (7) intragenerational equity, and (8) responsibility. These principles serve to guide energy analysis and planning by ensuring that all individuals have access to sufficient energy resources to meet daily needs and at the same time not be burdened by financial costs; communities must be involved in fair, transparent, and accountable forms of decision-making about projects that will affect them; use of energy resources should not cause undue damage to the environment and acknowledge the distributive equity of both present and future generations; there is a role for every individual in the climate movement to minimise energy-related threats (Sovacool and Dworkin, 2015). However, based on the authors' review on the involvement of non-Western justice theorists, Sovacool et al. (2017) have since modified the framework by adding the principles of “resistance” (standing up to injustice) and “intersectionality” (recognition that issues of energy justice are linked to other elements such as socio-economic and politics).

In the context of the energy transition, Arora and Schroeder (2022) shed light on the idea that recognition justice has a pivotal role in relation to other justice tenets, as both procedural and distribution aspects are likely to be impeded in the absence of recognition. Their study has shown the importance of considering just elements in energy transitions because of the potential pitfalls and opportunities that arise as countries race against emission reduction targets and timetables (Arora and Schroeder, 2022). He and Sikor (2015) also contributed to recognition literature by expanding on Honneth's (2004) idea of plurality of justice, acknowledging people's distinct identities and histories, and the multiple types and levels of people's preferences (or values) attached to the ecosystem, including notions of what is perceived to be just. As more authors are contributing their own perspectives and agendas to the literature, it is evident that the field of energy justice is still evolving (Jenkins et al., 2021). A notable example is Feenstra and Özerol's (2021) contribution to the gender-energy nexus research with the development of a conceptual framework that juxtaposes the three tenets of energy justice and the three engendering policy discourses of women empowerment, gender mainstreaming, and social inclusion.

2.2 Energy poverty

The term energy poverty can be traced back to the work of British researchers on fuel poverty in the early nineties, and it broadly means that a household does not have sufficient access to modern energy services at home (Middlemiss et al., 2020). Across research and EU member policies, a range of approaches to measure energy poverty can be identified (Feenstra and Clancy, 2020).

Specifically in the Netherlands, the Netherlands Environmental Assessment Agency (PBL) uses two indicators to measure energy poverty: energy quota and payment risk (Middlemiss et al., 2020). Energy quota refers to the percentage of energy costs as part of the total household income, and a common measurement is that a household is energy-poor if more than 10% of household income is spent on energy costs (Middlemiss et al., 2020). However, PBL recognises that there are high-income households that have a high energy quota due to energy-intensive lifestyles; therefore, payment risk specifically looks at households that do not have enough budget for living expenses after paying for housing and energy costs (Middlemiss et al., 2020).

In the Netherlands, hundreds of thousands of households are living in energy poverty (Middlemiss et al., 2020). However, in the Dutch NECP, there were not yet any specific policy objectives related to energy poverty (EZK, 2019). The government had not differentiated energy poverty from income-poverty and so support for households with a lower income was still part of social policy (Feenstra et al., 2021; EZK, 2019). An opportunity for the Netherlands to establish a national agenda on this issue has arisen as the European Commission had given reporting requirements for the member states to include specific policies and measures to address the issue (European Commission, n.d.). Besides, in the white paper ‘Energy poverty and the Energy Transition’, Middlemiss et al. (2020) argue that the energy transition could worsen the existing energy poverty problem because the energy transition may, in short-term, lead to higher energy costs. This is because households need to invest in new sustainable technology which are often only used by higher-income households, and those who are unable to will continue to rely on fossil fuels which will become increasingly more expensive due to policies to encourage the energy transition (Middlemiss et al., 2020).

2.3 Not-In-My-Backyard

The term “NIMBY” (Not-In-My-Backyard) is often used to both describe and explain the phenomena of public opposition to undesired new facility siting, ranging from infrastructure facilities (e.g., nuclear power plants, highways etc.) to social facilities (e.g., mental health care, housing etc.) (Devine-Wright, 2009; Wolsink, 2000). Renewable energy projects are especially relevant since many countries have committed to increasing the percentage of renewable energy resources in their energy mix in response to climate change (Devine-Wright, 2009). For wind energy projects in particular, wind turbine siting has been met by strong local opposition despite

the conventional view that people support the use of more wind power (Wolsink, 2000). Perplexed by this local resistance against their projects, project developers and stakeholders involved in the developments tend to explain the problem using the NIMBY argument (Wolsink, 2000). In these cases, “NIMBYs” are commonly used to label local residents who are in favour of wind power but are opposed to wind turbines being built in their vicinity (Devine-Wright, 2009).

According to Devine-Wright (2009), the NIMBY concept has also been used to describe resistance that stems from the individual level due to ignorance and selfishness. It is assumed that the opposition is based upon one’s insufficient comprehension of said problem and technology, but qualitative researchers have shown that individuals opposing developments are often well-versed in the topic and cannot be assumed uninformed (Devine-Wright, 2009). Based on Burningham et al.’s (2006) review, some researchers who equated NIMBY as a response based on self-interest have claimed that such protests should be less important than the broader social and environmental concerns. However, the idea of self-centred NIMBY is widely contested as other researchers have suggested that this presumption overlooks the interests and motives of the opponents as their perceptions of risk are also disregarded (Wolsink, 2000).

Although seemingly straightforward at first, the research of NIMBY-ism has shown that the concept is rather complex, especially since it has been widely critiqued by social scientists that NIMBY oversimplifies the issue surrounding local opposition (Bell et al., 2013; Burningham, 2000). Across NIMBY literature, there is a consensus that local resistance should be viewed more critically from the lenses of issues of justice, equity, and trust in energy conflicts (Devine-Wright, 2009). Drawing from environmental and energy justice literature, Hess et al. (2021) claimed that structural inequality (i.e., lack of democratic decision-making) is more likely to have led to resistance to the siting of wind turbines than social psychological factors and illustrated that justice concepts can help to guide frames of energy opposition mobilisations. Burningham et al. (2006) have also concluded that NIMBY and all the relevant acronyms that have surfaced in response to it (e.g., NOPE, YIMBY, etc.) are over-simplifications of the complexity of reactions to land-use decisions.

2.4 Citizen Participation

It is widely argued that more citizen participation in government decision-making procedures bear essential benefits (Irvin and Stansbury, 2004). To lay the foundation of the concept’s relevance in

this study, the classic ladder of citizen participation by Arnstein (1969) which is regarded as essential to the debate surrounding the topic is briefly explained (Lane, 2005). As seen in Figure 1, Arnstein (1969) proposed a typology of eight levels of participation, illustrated using a ladder in which each rung corresponds to the extent of citizens' power in influencing the end product of a policy problem. Here, it can be seen that common tactics used by government agencies to involve the public such as “informing” and “consultation” (Lane, 2005) are regarded as tokenism. Arnstein (1969) argues that while citizens may indeed be given a voice under these conditions, they do not hold the power of changing the status quo. However, this perspective is not universally shared as researchers argue that it dismisses the significance of formal powers and ignores the possible benefits of being consulted throughout other stages in policy-making and planning (Lane, 2005). Besides, there is also consideration that the necessity and efficiency of public participation is dependent upon the types of policy problems, i.e. public participation may not be appropriate for all kinds of policy problems (Hurlbert and Gupta, 2015).

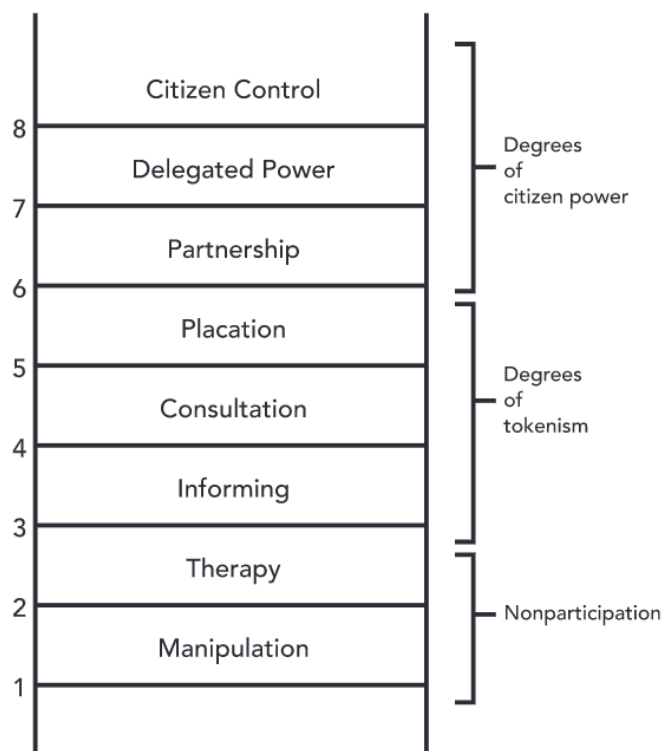


Figure 1. Eight rungs on a ladder of citizen participation. (Arnstein, 1969)

The discussion of citizen participation is not foreign among energy transition and energy justice scholars. For instance, Vitéz and Lavrijssen (2020) used a case study of the Dutch heat

market to bring light to the issue that there is a lack of flexibility in the current regulatory framework and reasoned that more effort is needed to facilitate substantive citizen participation for an energy transition that is more just. It is important to note that in the context of the energy transition, substantive participation goes beyond the aforementioned aspects of procedural participation (Vitéz and Lavrijssen, 2020). Here, citizen participation is further developed based on the theories of energy justice and energy democracy. Similarly, Beauchamp and Walsh (2021) explored the concept of energy citizenship and its role in the Dutch energy transition and found that gas-free alternatives are not equal in terms of their ability to enable energy citizenship. This is because heat networks that are socially inclusive may only require passive citizen engagement while individual household level installations that require active engagement are more socially exclusive due to its high investment costs (Beauchamp and Walsh, 2021). As more attention is paid to the concept of active consumers as well as the role of renewable energy communities to enable citizen participation in the energy transition, Hanke et al. (2021) found that there is still limited empirical evidence that renewable energy communities can maximise their intended social role to improve distribution of affordable energy to vulnerable groups due to various reasons such as lack of financial stability and personnel as well as knowledge about energy vulnerabilities.

2.5 Conclusion on sensitising concepts

Similar to other social theories which are not definitive in nature, all concepts above are studied and analysed as sensitising concepts rather than from a strong conceptual lens (Blumer, 1954). I started this research by examining and utilising energy justice as a broader concept that is not absolute but as a guidance in approaching events in the empirical world (Blumer, 1954). Here, I highlight Jenkins et al.'s (2020) statement that the quest for energy justice does not point towards a "single, universalist 'just' outcome", but provides grounds for "a plurality of definitions that emphasise the contextualised voices of affected population" (p.3). Subsequently, the latter concepts (energy poverty, NIMBY, and citizen participation) emerged due to empirical requirements based on the research question. Therefore, sensitising concepts was used to shape my research in the attempt to encapsulate a diverse outlook on the role of justice in the Dutch energy transition strategies.

3. Methodology

An interpretive research approach that is meaning-oriented with an abductive logic (Haverland and Yanow, 2012) was chosen to seek out any possible relevant information and to maximise the range of interpretations of the energy justice topic in the empirical world. This means that I sought to grasp the meaning(s) of justice in the energy transition for participants and thus variables are not included, and hypotheses are not tested (Haverland and Yanow, 2012). In the following subsections, the matter of access to data, as well as data generation and analysis methods are elaborated.

3.1 Data access

In order to limit the scope of the research, the Twente energy region in the Netherlands was selected to generate research data. The energy region of Twente lies in the east of the Netherlands, consisting of fourteen municipalities, water boards, and the province of Overijssel, and it has a sizable population of approximately 632,000 inhabitants (CBS, 2021). In the energy region of Twente, “RES Twente” is the relevant working group that oversees the region’s energy transition plans in line with national goals.

Currently, there is a knowledge gap regarding justice and its role in the Dutch energy transition from the perspectives of actors in the Twente energy region. Scholars who investigated the Dutch energy transition have predominantly selected research participants in the Randstad area, (i.e., Amsterdam, Rotterdam, Utrecht etc.) which is more urbanised and industrialised (Bosman et al., 2014; Kern and Smith, 2008). Therefore, it was expected that actors from the Twente energy region may offer a different perspective compared to those from the Randstad area. Focussing on the area which is relatively more rural, the Twente energy region serves as a valuable setting to explore the Dutch energy transition phenomena. Besides, the ease of access due to my location of residence in the city of Enschede which is situated in the Twente energy region also played a role in the selection. Keeping the interpretive approach in mind, I was more able to participate in local activities and in the locals’ settings (Schwartz-Shea and Yanow, 2012). Based on the mentioned factors, the energy region of Twente was chosen to explore the role of justice in the Dutch energy transition strategies.

3.2 Data generation

One of the key methods for data generation was through participatory observations at energy workshops (in Dutch: energiewerkplaats) organised in the Twente energy region. These energy workshops are organised every month by RES Twente and Nieuwe Energie Overijssel¹, where all municipal and provincial officials meetup to exchange knowledge and experience with the goal to accelerate the energy transition (RES Twente, n.d.). During the participation of 2 of the energy workshops, I took field notes on how the energy transition is being organised on the regional level and was introduced to topics that are on the Dutch energy transition agenda. Through my participation in these sessions, I was able to better contextualise the topics raised later by research participants regarding the Dutch energy transition strategies.

A total of 11 interviews were conducted between May and June 2022, as seen in Table 1. The interviews were designed to be semi-structured, with each interview lasting between 30 and 45 minutes. 3 interviewees were approached at the energy workshops whereas 8 interviewees were identified through document analysis or the snowball sampling method. The majority of the interviews took place online using Microsoft Teams and 3 interviews were held in-person according to the preferences of interviewees. All interviews were recorded with the consent of interviewees prior to the interviews and the information sheet and consent form can be found in Appendix 1.

Table 1. List of interviews.

Interview	Affiliation	Date
A	Province	12-05-2022
B	MARET ² Project Research	12-05-2022
C	MARET Project Research	13-05-2022
D	City Council	16-05-2022
E	Municipality	17-05-2022
F	Province	18-05-2022
G	Province	20-05-2022
H	Municipality	25-05-2022
I	Municipality	02-06-2022

¹ a network in the province of Overijssel that consists of (non-)profit organisations to connect and strengthen initiatives that contribute to the realisation of the Dutch climate goals.

² MARET is a collaboration between provinces of Groningen, North Brabant, Overijssel, Zeeland, and South Holland and the national program of RES with the aim to gain scientific knowledge about societal issues of the regional energy transition.

J	Municipality	03-06-2022
K	Municipality	09-06-2022

To facilitate the interviewing process, I experimented with the technique of ordinary language interviewing by Schaffer (2019). This technique has the purpose to uncover the various meanings of words that people use and its design was expected to fit the research objective of exploring perceptions better compared to the more general form of qualitative interviewing (Schaffer, 2019). To prepare for the interviews, I studied the deliberate questioning strategies by Schaffer (2019) which can be seen in the interview guide in Appendix 2, Table A1. During the interviews, I used an open-ended question to start the conversation and subsequently asked follow-up questions based on the questioning strategies. Then, more specific questions that were prepared beforehand were raised. Again, although existing concepts have been studied, it was essential to allow interviewees to expand on their personal experiences such that all possible data could be generated.

3.3 Data analysis

Research data was analysed using a method of qualitative content analysis as proposed by Mayring (2015). This method of analysis was chosen because of its suitability for explorative studies and its wide usage in qualitative research (Mayring, 2015; Schreier et al., 2020). First, the audio-recorded interviews were transcribed using the speech-to-text transcribing software Amberscript. Next, coding was done using the program ATLAS.ti. The codes were derived by highlighting exact words or phrases from the text data to capture core concepts mentioned by interviewees. Along with this coding process, initial impressions and analysis were documented and further developed throughout the research. The codes were then organised into categories when patterns were identified. As will be seen in the following chapters, the categories are presented as “topics” which followed the phrases from the interview transcripts as closely as possible. Then, the topics were organised into groups based on the way topics were mentioned in relation to each other by interviewees. Finally, in order to upkeep the trustworthiness of the analysis, the codes were scrutinised and discussed from the theoretical lens.

Besides the practical step-by-step methods, epistemological insights from Schaffer (2019) on ordinary language analysis were also useful for the analysis. This is due to the foreseen

challenge of drawing conclusions on how words would be used by interviewees, which was confirmed partially because of the language barrier between me and the interviewees. Schaffer (2019) recommended to reflect on ordinary language philosopher Wittgenstein's insights and to confirm initial interpretations by posing similar questions to people who speak the same native language as interviewees to verify understanding. This was relevant because the core term in this thesis — justice — was revealed to be more ambiguous than expected. Upon consultation with Dutch-speaking colleagues, it was suggested that the word “just³” which translates to “juist” or “eerlijk” in the Dutch language may be more commonly used in the context of the law. Therefore, as anticipated, the reading and analysing of text data was an iterative process where continuous conversations with my colleagues and supervisor were held to obtain fruitful analyses of the data.

3.4 Research ethics

To carry out an ethically responsible research practice, this subsection is dedicated to addressing the scientific integrity concerns related to data generation and analysis for the research. Since human participants were involved in a direct manner through interviews to generate data, the general ethical principles such as the minimisation of risks and burdens for the participants were taken into account (BMS, n.d.).

To begin with, an ethical assessment of the research had to be submitted to be reviewed by the Ethical Committee in the Faculty of Behavioural, Management and Social Sciences. To summarise, interviewees had to be clearly informed about the research purpose so that they were able to make an informed decision on their willingness to participate in the study. This informed consent procedure included an information sheet as well as an informed consent form that was signed by interviewees prior to the interview. An important reminder for the participants was that they had the right to withdraw from the research at any time without consequences. Furthermore, the privacy of interviewees are also protected through responsible handling and storage of data according to the university's data policy.

Besides the formal requirements of the ethical assessment procedure, importance was also placed on my positionality as the researcher and an individual who engages with energy in my daily life (Staddon, 2017). As described by Staddon (2017) and Riese (2019), this is because my

³ “Just” is defined as “fair; morally correct” (Cambridge Dictionary, n.d.).

positionality would affect not only my research methodology and interaction with research participants, but also in the ways that I conceptualise the energy justice issue. To address this, above methodological procedures and research choices made are reflected iteratively throughout the research process and documented as transparent as possible.

4. Findings

This section describes the results of the research based on interviews with 11 actors from the Twente energy region. The topics are developed and organised based on the subjects raised by interviewees and is shown in Table 2. Through these interviews, I found that there is a trend of homogenous perceptions regarding justice in the Dutch energy transition among actors in Twente. The findings have given some sort of understanding to the ways notions of justice emerge in the organisation of the energy transition strategies as a whole in the Netherlands.

Table 2. Topics mentioned by interviewees

Topics/Interviewee	A	B	C	D	E	F	G	H	I	J	K	Total
Affordability	•	•	•	•	•	•	•	•	•	•	•	11
Accessibility of financial instruments	•		•	•	•	•	•	•	•	•	•	10
Political dimension	•	•	•	•	•		•	•	•	•	•	10
Energy poverty	•	•	•		•	•	•	•	•	•		9
Growing inequality	•	•	•	•	•	•		•	•		•	9
Disconnection between policy levels	•			•	•	•		•	•	•		7
Information and knowledge support	•				•		•	•	•	•	•	7
Citizen participation		•	•		•	•			•	•	•	7
Windmill siting concerns/NIMBY	•	•	•		•				•		•	6
Local ownership			•		•	•		•	•			5
Liberalisation of energy market		•					•	•	•			4
Trust in government		•	•				•			•		4
Inter-generational consequences		•		•			•					3

4.1 Perceptions of relevant themes in the Dutch energy transition

4.1.1 Affordability of the energy transition

A common view amongst all interviewees was that the affordability of the energy transition poses a prominent concern. Even though many Dutch inhabitants realise that it is necessary and important to get the energy transition started, the expected costs are still very high and unfeasible for many people. Some interviewees expected that if there was more of a financial incentive, more Dutch inhabitants would be willing to participate in the energy transition, but this is currently not

the case except for the wealthier group. Multiple interviewees brought up the recent Russian invasion of Ukraine and shared their observations that there is a rise in awareness of the Netherlands' gas dependency. However, although people want to reduce their fossil fuel consumption, measures such as household renovations to become more sustainable (e.g., installing solar panels and/or heat pumps) are still very expensive. This was reflected also in majority of the interviews where interviewees expressed that they themselves are unable to afford a household retrofit despite their strong desire to do so.

“We are too much dependent on our fossil fuels. Speaking in terms of addiction, you cannot lay off cold turkey with fossil fuel. For people who can afford it, it is easier to make the transition.”

Besides the high costs of household retrofitting, interviewees also brought up the issue of energy transition in mobility. An interviewee from an average-income household shared their perspective:

“You're just getting by every day, and it's really difficult — we don't have €30,000 to buy an electric car. I definitely want it for so many reasons but I simply can't buy it.”

It is apparent that the relatively high cost of electric vehicles makes the switch from a fuel-based car to an electric car difficult for a large part of society. To be able to enjoy lower future expenses on their car, one needs to make a large investment in the first place, and this is not viable for a lot of people who do not have a large amount of dispensable money in their savings. Therefore, there is a common consensus among the interviewees that the government's current energy transition strategies are not engaging with much of the society because it is only attainable for the people who have sufficient financial resources, whereas those who are not able to afford to take measures are being left behind. However, uncertainties were shown in some interviewees as they shared their ideas on whether the affordability of the energy transition is specifically a justice concern.

“My feeling says it's unjust if part of the population can participate, can become more sustainable, can take measures, and another part cannot even though they want to. That seems unjust. But of course, that goes for a lot of things. It goes for holidays as well. Some

people can afford five holidays. Some people cannot afford a holiday at all. We don't have programs for that from the governments. So, unjust is, I think, hard to define.”

4.1.2 Accessibility of financial instruments

Although there are financial instruments such as loans or subsidies provided by the (national) government to support people in the energy transition, it was frequently mentioned that there are many people who are unable to utilise them. Multiple interviewees stated that the current system is unable to reach certain groups of society such as senior citizens or people who are lower educated, who are either not aware of the need for an energy transition or do not understand how to begin asking for help. An interviewee questioned the justness of the government's energy policy because the financial instruments that are supposed to encourage people to participate in the energy transition are not accessible to everyone, especially those most in need. With up to 36 different subsidies related to energy, besides the many different forms to be filled in, interviewees talked about the need for applicants to be digitally smart to first be able to find their way through the application process. One of the interviewees expressed that the difficult application process can even overwhelm municipality employees who work in the field and are digitally savvy.

Disregarding the maze of the application process, some interviewees brought up that it is often the people who already have the financial means that would benefit from sustainability related subsidies. An example given by one of the municipality employees was that while there are sustainability funds available with the purpose of encouraging local inhabitants to make sustainable adjustments in their houses, an upfront investment of at least 4000 euros per household is required to begin the retrofitting process. Then, only after this initial investment is made that they could apply a subsidy of 1400 euros from the municipality. Even though the financial cost will gradually be returned due to lower energy bills in the future, people who live in most poorly insulated houses usually do not have the financial means to make the initial investment. In short, it was observed that such subsidies are not able to reach the group of people with the worst insulated houses and would benefit a lot from the help.

In another case, an interviewee questioned the exceptions made for the energy allowance that is supposedly available for people with an income of up to 120 percent of the social minimum. The interviewee noticed that among other exceptions, students are one of the groups that will not be able to request this allowance. As a student themselves, the interviewee contended that students

are one of the most vulnerable people in society as most of them completely rely on student loans. With the rise of energy bills, it does not make sense to them that students are excluded from the allowance but asked to request a bigger loan to manage their bills.

“When you don’t have a lot of money, you really don’t want to have a loan that you will have to pay back every month. You have to both pay bills and pay off a loan. That’s just not feasible for a lot of people.”

While these exceptions are in place due to national guidelines, they are technically non-binding and local governments could deviate from them. Therefore, the interviewee argued that the local government could and should lose the exception based on their own evaluations. However, this is highly dependent on the political landscape of the city council. They asserted that policymakers and decision-makers are often people who are already in another life phase, and thus are unable to consider the uncertainties and consequences that come with requesting loans as a student.

4.1.3 Political dimension

A recurrent theme in the interviews was a sense amongst interviewees that politics and political processes are central to the organisation of the energy transition. Although there is recognition that the energy transition should predominantly tackle the ecological and existential threat of climate change, multiple interviewees stated that the current right-leaning (national) government that is more economic-focused is viewing the energy transition from an economical perspective and looking at how the energy transition could be economically beneficial. As a consequence, many choices that were (not-)made in the energy transition strategies were perceived as driven by politics and not in the interests of mitigating and adapting to climate change. For example, the current lack of implementation of regulations so that polluters (big process industry companies) pay for their pollution (excessive carbon emissions) was perceived by an interviewee to be a political choice driven by economic interests.

Furthermore, while allowing a large part of the energy transition process to be driven by market mechanisms, it was revealed that not much consideration is given to making the energy transition just and fair for everyone in society. Multiple interviewees reported feeling that there is the political idea that inhabitants will be able to participate in the energy transition as long as they work hard and make energy-related investments. There were concerns about the expectation that

people can fend for themselves because it lacks the foresight that there is a large group of people who would not be able to do so, not because they do not work as hard but due to various socio-economic circumstances. Therefore, it was mentioned that a fundamental system change needs to happen, but the overall political complexity is a huge barrier. When asked about how political actors' perception of justice is influencing the energy transition, one interviewee shared:

“I do believe that those personal views somehow play a role in decision making. And maybe the bad thing, but the good thing about this issue is that everybody has a concern. Everybody [consumes] energy in their personal lives. You're deciding about energy consumption, energy system. Everybody is connected to it. So, you're talking about something very intricate to your life and lifestyle. You need to take a position, be aware of a few positions as not only regulator of the energy system, but you're also consumer of the energy system.”

4.1.4 Energy poverty

I was first exposed to the topic of energy poverty in the Dutch context at RES Twente's energy workshop wherein it was one of the few topics that had its own session on the agenda. Non-surprisingly, energy poverty was one of the themes that was distinguished in 9 out of 11 of the interviews. Interviewees expressed that the energy poverty topic was not always as recognised in the Netherlands as compared to the neighbouring countries in the United Kingdom, and it had only entered the Dutch political agenda approximately two years ago. This was largely due to the increasingly fluctuating energy prices and now further perpetuated by Russia's invasion of Ukraine which had broadened the pool of people struggling with their domestic energy bills.

Although the national government has recently allocated funding to municipalities to tackle the energy poverty problem, multiple interviewees expressed that their municipalities are still financially unequipped to fundamentally improve the conditions of energy-poor households. Currently, the funds are only suitable for short-term solutions such as giving out weatherstrips⁴ or sustainable lightbulbs that do not create long-term sustainable changes. In the effort to address the inefficiency of these measures, one of the municipalities started a different approach by using the funds to subsidise bigger insulation measures for a smaller group of households. This point was

⁴ Mentioned in Dutch by interviewees: *tochtstrip*. Weatherstrips are adhesive-backed foams to be placed in the gaps of windows or doors to keep out draught, thus saving energy.

also observed during an energy workshop session where this initiative was presented to other municipalities and discussions were held. During the session, something that stood out was the discussion about barriers surrounding the logistics of identifying and reaching the target group, and this was also later repeated by multiple interviewees. It was reported that data privacy protection laws which restrict municipalities' access to the tax system (albeit rightfully appropriate) have made the process of reaching out to the low-income and energy-poor groups more labour intensive. With the goals of energy transition in mind, there was a consensus among interviewees that the energy transition will be undermined because of energy poverty. Interviewees stressed that if people are already struggling with monthly energy bills, big investments unlikely to be feasible for them to make. To tackle this issue at its core, some interviewees shared that even more financial support from the national government is needed.

Furthermore, it was mentioned that the government also plays a role in reducing stigma around poverty. This is important because social stigma perpetuates the cycle of shame and discourages people from reaching out for help. An interviewee shared that their municipality is trying to spread awareness through marketing campaigns that illustrate lived experiences, as well as having someone connected to the community (e.g., local celebrity) to encourage people who need help to reach out.

While there is a large correlation between income poverty and energy poverty, interviewees observed that energy poverty no longer only affects people who experience income poverty. Consequently, different opinions about the allocation of subsidies emerge due to the income requirement of the financial instrument. With a finite amount of subsidy, an interviewee raised the questions of what the (low-)income cut-off point is, and how should the government distribute them such that it is fair for everyone?

4.1.5 Growing inequality

Out of the 11 interviewees, 9 of them brought up the growing divide of inequalities in Dutch society. Majority of the interviewees explicitly expressed that it is “not just” or “not really just” that the energy transition would contribute to an increasing gap between the rich and the poor. Mentioned in relation to the affordability of the energy transition, several interviewees elaborated on that households that can afford to make their house more sustainable will benefit from lower energy bills, whereas those who are not able to afford the retrofit will continue to be subjected to

increasingly burdensome energy costs. An interviewee mentioned that the common narrative about the Netherlands' social equality has shadowed the stories of the people who are struggling due to lack of education and/or experiences with other socio-economic problems. Interviewees talked about the urgent need to address these inequalities in society while organising the energy transition because of the perspective that the well-being of a country is dependent on the measurement of equality in its society. When asked how they would define energy justice in the context of the energy transition, an interviewee responded:

“There will always be differences [in society], I think. So, energy justice for me, is about organising the system in this way that the gap between rich poor is not getting bigger, but maybe even smaller.”

4.1.6 Disconnection between policy levels

From the perspectives of 7 interviewees, the large distance between government employees who make plans on the national level and those executing them on the local level often poses problems. Interviewees that consist of provincial and municipality employees expressed that from their experiences, it seems that the national government does not fully recognize the difficulties of executing national policies on the ground level.

“I get that [the national government is] trying, but they're very good at stating something and then delegating [the tasks] to municipalities. The Ministry of Climate said, ‘All municipalities should be off Russian gas by September or October.’ Looking at it from a citizen's perspective, [I think it's] a good thing. [But] working in a municipality, I [think they] shouldn't have said that because now gas prices for us will be not doubled, not tripled, but I think quadrupled because everybody knows the need of us to get off Russian gas, [and] there won't be any compensation from the national government.”

Furthermore, interviewees revealed that the tight deadlines set by the national government are often unrealistic when there is an issue of limited employee capacity in municipalities. Taking the example of the energy poverty topic, the money received from the national government needs to be allocated to the target group within a limited timeframe. An interviewee commented that the deadline is nearly impossible to meet when the task of reaching an almost invisible group is extremely labour intensive.

Another problem with the disconnection between policy levels is that local municipalities do not have long-term structure and funding from the national government. For every single issue, municipalities have to make individual applications based on attached criteria and then make the financial account for each funding. An example was given such that subsidies for improving housing insulation differ for homeowners and renters, and so municipalities need to follow different procedures to make them both available for local inhabitants. Moreover, the incidental financial measures meant that municipalities are unable to build consistent and sustainable approaches in terms of personnel. An interview expressed that the lack of long-term structure especially for the topic of energy transition creates many bureaucratic complications that further delay execution.

4.1.7 Information and knowledge support

While supporting people in terms of finances was seen as of utmost importance for reasons mentioned previously, interviewees also brought up the need to support people in the forms of information and knowledge. Interviewees shared that there are some municipalities in the Twente energy region that already have programs where energy coaches could visit houses to give advice on ways to improve household energy bills or to transition to a new heating system. However, it was noted that there are possibly many more inhabitants who could benefit from this but have not reached out for help. Therefore, there were suggestions that more attention could be paid to the steps taken to reach people. Besides having designated information counters at municipality buildings, interviewees talked about actively working with local organisations that local inhabitants already trust such as the local community centres, religious communities, or schools.

Moreover, some interviewees commented that there seem to be no consensus among Dutch inhabitants about the energy transition. It was mentioned that scientific reports or news about climate change effects from the other side of the globe, or even from the other side of the country, do not necessarily connect with the lived reality for some inhabitants in the Twente energy region, and so many people do not know what this transition entails personally for them. To address this, interviewees talked about the importance of connecting with local inhabitants by explaining the personal relevance of how climate change would affect them and what the best energy transition methods are in the context of the region.

4.1.8 Citizen participation

Another topic that frequently emerged was the participatory aspect of the energy transition. It was commonly expressed that it is important to include local inhabitants in the whole transition process. Some interviewees noted that although participatory opportunities are present, they are almost always at the final stages of planning. Examples of these participatory opportunities are town hall meetings or information evenings organised by local municipalities. Interviewees revealed that there were cases where people felt that they were unable to influence the outcome of a plan which would heavily influence their lives because the meetings were only meant to inform them of the decisions that were already made by the government. To tackle this, multiple interviewees shared that bottom-up approaches that actively involve citizens in the plenary phase would imply more meaningful participation. This is because everybody could have the chance to participate in the topic in an easier way which would also increase the social acceptance of the energy transition. However, an interviewee mentioned that this is foreign to the government's traditionally top-down method of working.

Conversely, some interviewees also considered the other side of the argument for more citizen participation in the energy transition process. The perspective was such that while it is good that citizens are actively involved and it is important to value everybody's opinions, there would be a standstill and plans will never be moved forward because everything needs to be discussed and debated. Therefore, it was noted that process participation of citizens on every level of every topic would not be very helpful for the energy transition.

“It's a very good thing. But that sometimes also implies freedom of opinion. Every single thing where you can just disagree that something has to happen. But sometimes something just needs to happen. And somewhere that windmill needs to land. And if you all have to consent and I know everybody has to agree and we all get to participate, it's never going to happen. And that's a very Dutch thing, I think. You know, 'this is my right to oppose to this. And I don't care if it benefits everybody else. It is my right to oppose.' I think that's a very Dutch thing.”

4.1.9 Windmill siting concerns and Not-In-My-Backyard (NIMBY)

With regards to planning and making decisions for the siting of renewable energy projects, interviewees expressed that the debate about fairness comes up often in a relatively small country

such as the Netherlands. For interviewees involved in the MARET project, the existing inequalities (e.g., income differences, rising pollution, etc.) between rural and urban areas are being investigated because energy installations are most likely to be placed in rural areas while most energy demand comes from the urban areas. Emphasis is put on considering the concerns of whether new siting of renewable energy would ease or add to the prevailing inequalities. This is particularly relevant as the problem of complaints from inhabitants about wind energy projects were raised in most interviews. Several interviewees who have attended town hall meetings or information meetings related to wind energy projects observed that local inhabitants were incessant about their protests against the siting of wind turbines. These complaints ranged from health burdens, aesthetic degradation of the much-valued landscape, to the safety of animals in the vicinity. Due to the many barriers to realise the projects, wind energy projects are no longer in active consideration in several interviewees' municipalities. Despite the difficulties, one of the interviewees talked about their municipality's willingness to continue looking for ways to implement wind energy projects due to the benefits for everyone in the city. They emphasised that backlashes are still expected, but concerns of people who live in the vicinity are actively considered as they are working to find ways to compensate for the burdens with financial benefits.

On the other hand, interviewees also brought up inter-municipal issues that have arisen for windmill siting plans as they sometimes have cross-border consequences. Some interviewees have described the local resistance using the phrase "Not-In-My-Backyard" (NIMBY), and a discovery that stood out from the interviews is when class difference was brought into the NIMBY argument.

"People are selfish. There's always another place where the things you don't want can take place. So, what I hear a lot, from well-educated people: 'Yes, the energy transition is important. Yes, we have to take action, but not in my backyard.'"

It was observed that people who were able to prevent realisation of wind energy plans in their neighbourhood are those of the upper-class who are well-educated, more assertive, and have connections with local politicians. However, there is another group of people who do not have the means to do so and are less able to resist plans that also affect their living environment. Multiple interviewees contended that while it is important to consider the complaints about wind energy development, other objective factors of the energy transition should not be disregarded. For

instance, what are the alternatives to wind energy, and how will this affect the costs of the energy transition?

“Governors make decisions driven by the loud complaints of a small group of people, wind energy in particular. When they make their decisions, they don’t focus on the whole of the arguments. They don’t consider that choosing for solar energy, [instead of wind], is an expensive way to produce energy. A large part of the community will have to cope with higher energy prices, and that makes it not very just for me.”

4.1.10 Local ownership

Multiple interviewees also brought up “local ownership”, a topic that is part of the Dutch NECP which focuses on ensuring at least 50% local ownership in every RESs. There was acknowledgement that the definition of local ownership is very broad, and that each municipality has the freedom to define this for themselves. While some municipalities have defined local ownerships as private individuals being owners of a renewable energy source, other municipalities have ideas that if a renewable energy source is owned by the local municipality or any local communities, it could also be defined as local ownership. In the case of the latter, interviewees mentioned local ownership as a solution in response to the above-mentioned dilemma of citizen participation. In addition to the bottom-up approach where local inhabitants are involved in decision-making, they would also be able to have ownership of the new energy installations in their neighbourhood. In some ways, the energy transition would then be seen as less of an abstract concept but a concrete communal resource with benefits that is managed and benefitted by the locals. However, there were some reservations about how this process is currently being organised:

“It surprises me that [involving people in terms of participation and ownership] still go wrong really often. There’s a whole community energy movement, citizen initiatives from the bottom up, [and] they struggle with getting projects realised. [Their] solar PV farms, wind turbines... Because governments are not used to working with voluntary citizen initiatives.”

No matter how this would be implemented, interviewees expressed that this would promote fairness in the energy transition strategies. On the other hand, there were also concerns about whether local ownership would make the energy transition more unjust. This was mentioned in the case that local ownership is realised by local energy cooperatives in which local inhabitants

can invest in a share of an energy source. For instance, the cooperative would suggest placements of solar panels on the roofs of local farms, and investors could benefit from the locally produced renewable energy. Although this meets the criteria of local ownership, it was argued that it is again an instance where only people who can afford the investment will benefit whereas people who cannot afford it will be left out. Because of this, the interviewee wondered if the system would be more just if the national government had the key role of implementing their developed policies as they could, in theory, better distribute the benefits country-wide.

4.1.11 Liberalisation of energy market

The theme of liberalisation of the energy market came up when an interviewee offered their perspective regarding community energy initiatives. It was noted that in the eighties, while water supply remained centralised, the energy market was partly liberalised in the way that energy supply is decentralised and energy distribution remained public. The interviewee suggested that although this has enabled competitive entrants such as big fossil-fuel companies, it also brought upon different modes of energy supply such as smaller green companies or the aforementioned community energy initiatives as energy actors. It was implied that the liberalisation of the energy market have influenced public perceptions and thus caused the different reactions toward the current energy transition plans today. As Dutch inhabitants had gotten used to the working of the free-market, alternative plans to transition away from fossil fuels such as the heat network (in Dutch: warmtenet) are now being questioned and in some cases opposed by the public. Interviewees reported that this resistance is related to the perception that heat/energy networks which are centralised and restrictive inhibit their freedom of choice due to the bond they would have with only a single supplier for a longer period.

4.1.12 Trust in government

Some interviewees argued that the level of trust that citizens have in the government is also relevant in the discussion regarding the government's energy transition strategies. When asked to elaborate, an interviewee expressed that the government's history in decision-making has shown a lack of commitment to the energy transition path:

“[The government] had a track record of a stop-and-go policy where they said ‘OK, we incentivize solar energy,’ but then a few years later, they sort of came back from it. These uncertainties [are] definitely characteristics for the Netherlands’ energy policy and you

can say something about justice in that sense as well, right? Like, the trust that you have in government that they are committed to following a certain transition path.”

Moreover, it was explained that there is currently a lack of trust in the government due to several governmental misconducts in recent years. Due to these political scandals, an interviewee observed that citizens are questioning the government’s large investments on energy transition plans. Other interviewees talked about the consequences of this such as citizens distrust towards their municipality’s efforts in the local energy transition. For example, although municipalities think that a collective energy network is the best option for a neighbourhood, citizens that have low trust in the government are likely to be against the project due to its centralised nature. Some interviewees expressed that even though these transition projects are in the best interests of the citizens, they are still not received well because of the different perceptions of fairness. To address this, interviewees reported that there is a need to be more transparent from the national as well as local government. It was mentioned that more dialogue which requires time and effort are needed to build trust of local inhabitants.

4.1.13 Inter-generational consequences

Out of 11 interviewees, 3 of them brought up their concerns regarding justice for future generations. There was acknowledgement of the need for the current energy transition strategies to be flexible in the consideration of changing conditions that could occur in the coming years due to climate change. These interviewees talked about the collective responsibility to act and make changes now so that the next generations do not have to face similar burdens of climate change.

“I think fairness for the future is also very important. I mean, we inherited the fossil fuel industry that has been built up in years before us, that is also not just what the previous generation did to us, all the pollution that we now have. We don’t want the future generation to have similar burdens like we got from previous generations.”

5. Discussion

In this section, my interpretations of the research findings are discussed.

5.1 Perceptions of the Dutch energy transition strategies

As seen below, topics are clustered into 3 groups. As explained in the data analysis subsection, these groups were formed based on the way they were brought up in relation to each other in the interviews. As such, “inter-generational consequences” was not grouped as it was only mentioned with minimal connection to other topics during the interviews.

Table 2. Grouping of topics.

Group 1	Group 2	Group 3
<ul style="list-style-type: none"> • Affordability (4.1.1) • Accessibility (4.1.2) • Energy poverty (4.1.4) • Growing inequality (4.1.5) 	<ul style="list-style-type: none"> • Windmill and NIMBY (4.1.9) • Citizen participation (4.1.8) • Local ownership (4.1.10) 	<ul style="list-style-type: none"> • Political dimension (4.1.3) • Disconnection between policy levels (4.1.6) • Liberalisation of energy market (4.1.11) • Trust in government (4.1.13)

1. **Affordability** of the energy transition will exacerbate the existing **energy poverty** problem, and because **financial instruments are not accessible** for everyone, **inequality gap will grow**

Drawing on the energy justice framework, I found that Sovacool and Dworkin’s (2015) notion of affordability which addresses distributive concerns from McCauley et al.’s (2013) three-tenet framework occupies prominence across all interviews. In theory, the notion of affordability brings the idea that one should not have to spend disproportionately large percentage of their income on an essential service such as energy (Sovacool and Dworkin, 2015). Interviewees’ perspectives on this was clear that it acts as a major barrier for the acceleration of the energy transition.

Besides, it was suggested that the affordability of the energy transition and the existing energy poverty problem are becoming inextricably intertwined, reflecting previous findings that many households affected by energy poverty will continue to face obstacles when trying to

participate in the energy transition (Middlemiss et al., 2020). There is evidence from the findings that the current policy measures have not matured to sufficiently tackle the issue and may further exacerbate the problem. The key barriers identified are: (1) financial instruments by the national government are not sufficient to make long-term sustainable changes for energy-poor households, and (2) lack of resources to reach out to target group.

On the other hand, although there are financial instruments available to encourage citizen participation in the energy transition, interview data showed that these are more highly utilised by people who are in the middle-to-high income group. This finding corroborates those of the quantitative research by De Groote et al. (2016) that wealthier households have disproportionately benefitted from government support policies and the Matthew effect⁵ was suggested. Middlemiss et al. (2020) warned that an energy transition that is exclusive to the wealthy will only further exacerbate the existing energy poverty issue. An energy transition that does not pay attention to existing inequalities would no doubt contribute to a growing disparity gap, as the ones who can afford to invest in the energy transition will benefit while the other group would be left behind to face an ever-widening gap in participation of the energy transition. Most importantly, if part of the population is unable and/or less willing to board the transition train, the national and global plans to decarbonise will be delayed (Arora and Schroeder, 2022).

In addition to that, interview data also revealed details of neglect in national policy that need more attention — students are not being recognised as group that is entitled to energy allowances. This may be explained by Middlemiss et al.'s (2020) observation that students, among other groups, are not included in many statistics regarding problems with energy expenditure. Although this lack of recognition was only raised by one interviewee, it denotes the possibility that other vulnerable groups are also currently not recognised in the political arena.

To summarise, when speaking to the interviewees it became evident that concerns from a financial perspective were dominant. On these topics of affordability, accessibility of financial instruments, and energy poverty, it is important to restate that they do not only apply to communities that are in the low-income group as interviewees emphasise that the high energy

⁵ The Matthew effect is a social phenomenon describing the idea of the rich getting richer and the poor getting poorer (Merton, 1968).

prices and high costs to participate in the energy transition have also negatively affected those with an average-income.

2. Windmill siting concerns sometimes described as **NIMBY**, and the need for more substantive **citizen participation** in the form of **local ownership**

Interview data revealed that local inhabitants' concerns regarding windmill siting are to a large extent being acknowledged based on what Devine-Wright (2009) would describe as risk perceptions or place attachments and identities. For instance, interviewees recognise that renewable energy installations placed in urban areas require local inhabitants to make sacrifices such as enduring noise and visual pollution. However, protests against these projects were also sometimes described using the phrase "Not-In-My-Backyard" (NIMBY). Similar to Devine-Wright's (2009) findings, because the resistance could not be explained by individual ignorance, it was sometimes assumed to have stemmed from individual self-centredness.

Following from this, citizen engagement was perceived to be important in the energy transition. In line with Hess et al. (2021), some interviewees explained that current citizen participatory programs are not effectively engaging local inhabitants and may have contributed to the resistance. Their perspective resembles Arnstein's (1969) typology of citizen participation such that current programs are perceived as tokenistic exercises because local inhabitants hold no power in making actual decisions. However, some interviewees were also cautious about advocating for more citizen engagement in the energy transition, reflecting Hurlbert and Gupta's (2015) critique on Arnstein's ladder of participation. There were concerns that too many resources spent on discussions would put plans on a standstill, which is also not in the interests of citizens (Beauchamp and Walsh, 2021). For this reason, it was clear that substantive citizen participation in an energy transition would have to go beyond the conventional procedural aspects.

In response to the dilemma of needing to accelerate the energy transition and also considering public resistance to renewable energy installations, connection between citizen participation and local ownership was made. Sometimes described as part of bottom-up approaches, interview data revealed that there is an upward trend of local ownership in the form of energy cooperatives in local communities. In line with the claims by Vitéz and Lavrijssen (2020), interviewees expected that increased substantive citizen participation could foster a more just energy transition. This is because in addition to participatory decision-making, local

inhabitants are given more opportunities to engage with the development and production of energy, and at the same time more actively reflect on their own consumption of energy (Beauchampet and Walsh, 2021). To put it simply, local ownership might just be the answer to: (1) how to address opposition to renewable energy infrastructure siting, and (2) what is meaningful citizen participation?

However, doubts regarding the realisation of local ownership with energy cooperatives are worth unpacking. Although the renewable energy installation will be owned by local inhabitants — which at first sight can only seem like a positive movement — it was revealed that participation in an energy cooperative is available mostly for those with sufficient resources to make an investment and low-income groups are again underrepresented in this area. This corroborates the findings described by Beauchampet and Walsh (2021) and Hanke et al. (2021) whereby installations that require active citizen engagement are much more social-economically exclusive due to financial and other social barriers. Therefore, the interview data certainly confirmed the great complexity in achieving meaningful citizen participation in the energy transition, especially without stable supporting instruments from the national government.

3. Political dimension, liberalisation of energy market, trust in government, and disconnection between policy levels.

Interview data revealed that many (in-)actions in the Dutch energy transition strategies (i.e., allocation of subsidies, polluters-pay principle, etc.) are heavily influenced by politics. This often becomes problematic because questions about the climate and transition are always thrown back into the political arena. When the political landscape is largely driven by economic incentives and not environmental or social concerns, choices made are often not the best for the environment or vulnerable groups in society. Having observed that politics is fundamental to the governance of sustainable development, Meadowcroft (2009) claims that the formal mechanisms of the Dutch transition management may not be equipped to negotiate the political dimensions at hand.

It was implied by interviewees that market liberalisation lies at the heart of the Dutch energy transition strategies, supporting Meadowcroft (2009)'s observation that liberalisation remains to be the Dutch energy policy's main political driver. This instrument meant that customers have the freedom to choose their own energy supplier, and it has undoubtedly set the scene for the political discourse surrounding energy in the Netherlands today. In other words,

although this has stimulated the renewable energy market with the emergence of private energy cooperatives, it also laid down a political landscape that has induced mixed reactions regarding the energy transition today.

Multiple interviewees reported that centralised energy networks are not favoured by citizens due to the loss of freedom of choice, compounded by the fact that it is imposed upon them by a government they do not necessarily trust. Gölz and Wedderhoff (2018) suggest that there is indeed a relationship between citizens' trust in stakeholders and perceived fairness, which in turn affects acceptance of an energy transition. This is seen in how interviewees reported that previous (national) governmental scandals have created a general mistrust towards governmental bodies which undermined the efforts of local governments in the energy transition. Therefore, it is clear that more iterative consultation and communication is central to building confidence in the implementation of energy projects.

Although the national government's initiative with the RES is to steer the energy transition towards a more decentralised system, the organisation is still largely dependent on traditional hierarchical structures (van Dijk et al., 2022). This was clearly illustrated in the interview data as the disconnection between policy levels emerged as one of the most talked-about topics among the interviewees. In fact, this could be explained by one of the remarks made by an interviewee that the Dutch government has a tradition of top-down policymaking, therefore indicating that the current RES strategies are still new and foreign. From the interview data, there are obvious indications that there is a need for more reflexivity — this means the capacity for continuous reflection, assessment, and readjustment — in the governance of the energy transition (Meadowcroft, 2009).

5.2 Reflection on energy justice theory

This subsection addresses the aforementioned expectation to uncover perspectives without using a strong conceptual lens. Without steering interviewees to fixed tenets of energy justice, I found that although interviewees⁶ do not have preconceived notions specific to the energy justice theory, conceptions of distributional and procedural justice (McCauley et al., 2013) were observed to be central to their perceptions of what role justice plays in the Dutch energy transition strategies. Drawing on Arora and Schroeder's (2022) idea on the importance of recognition justice, its role is also discussed. Finally, this section is concluded with a summary on how the sensitising concepts have contributed to the broader energy justice literature.

Distributive justice was observed to be at the core of interviewees' ideas about how the energy transition should be organised because of the general sense about fair distribution of benefits and burdens. The current accessibility of financial instruments to help citizens invest in affordable and sustainable energy is lacking, and proper measures to address the burdens such as siting of renewable energy installations are also still missing. However, the question of what criteria would constitute a just distribution was especially prominent. With the problem of energy poverty rising for people across the ranges of income, complications regarding the allocation of subsidies for the energy transition have arisen.

The procedural dimension of justice was also distinguished to be important to interviewees. Due to the contestations surrounding the energy transition, it was expressed that alignment in conceptions can be achieved through decision-makers' initiative to engage with citizens. However, there is evidence that the tradition of the Netherlands' top-down implementation contradicts key principles of citizen participation. In this regard, interviewees brought forward the complexities and nuances of engaging the public in procedures and decision-making, especially with their limited resources. Therefore, although energy justice theory points towards the need for a procedure that engages all stakeholders in decision or action making, the local context and history showed that critical reflections are needed to foster a just environment for complex social processes.

⁶ Do not include interviewees who are researchers affiliated with academic institutions and are working on the MARET project.

On recognition justice, there is little evidence from interviewees' perspectives about its specific role in the Dutch energy transition strategies. On a single occasion it was revealed that current policies do not recognise certain groups (i.e. students etc.) to be eligible for an energy allowance. In other interviews, the implied marginalised group did not go beyond the specifics of those who have low-income and/or are less educated. Therefore, there seem to be a lack of emphasis on the importance of policies which address needs of different (marginalised) groups in the energy transition. Considering Arora and Schroeder's (2022) claim that recognition justice has significance in determining the presence of other justice tenets, the research findings revealed that difference in perceptions may affect consensus of decisions in the organisation of the energy system.

To summarise, starting the research by looking at energy justice theory as sensitising instead of definitive allowed the research results to show that the pursuit of justness in the empirical world is not straightforward. While tenets from McCauley et al.'s (2013) framework can be used to generalise actors' sentiments about what is perceived as just; and Sovacool and Dworkin's (2015) framework can be used to identify more specific principles, they are arguably still unable to capture the context-specific nuances. For example, the procedural aspect of justice theory without the consideration of Arnstein's (1969) typology of participation *and* Hurlbert and Gupta's (2015) critique of Arnstein's theory would have limited the production of the perspective that acknowledges the complexity of the energy system and the energy transition.

6. Conclusion

6.1 Summary

Guided by the research question “*how do actors in the Twente energy region perceive the justness of the energy transition in the Netherlands?*”, this research aimed to explore and develop an empirical justice perspective on the Dutch energy transition. The literature on energy justice in general as well as within the context of the energy transition has demonstrated the clear need for embedding justice elements in the organisation of the energy system. This thesis has expanded on this body of literature by using sensitising concepts to explore the role of justice in the context of complex socio-technological transitions. Through field observation at energy workshops and interviews with actors in the Twente energy region, the results revealed that there is still a low extent of justice consideration in the Dutch energy transition strategies, and interviewees hold the view that there is great room for improvement to realise an energy transition that is just in the Netherlands. Specifically by experimenting with the ordinary language interviewing method, actors’ perceptions were uncovered to learn what justice means in the context of the Dutch energy transition which involves a complex interaction between people, the environment, and technology.

In the most general sense, a justice perspective has provided some grounds for the contested responses towards the energy transition in the Netherlands. Although the Dutch energy transition strategies are aimed to be “feasible and affordable” (EZK, 2019, p. 225), it is evident that this is currently not yet realised. The findings showed that the affordability of the energy transition is a huge concern and the financial instruments that should facilitate citizens in this regard are not fairly accessible to everyone, especially those most vulnerable in society. Questions pertaining to justice arise when people are being subjected to increasing energy prices while at the same time, not receiving sufficient help to participate in and benefit from the energy transition. Based on interview data, I argue that the political dimension is the biggest, and if not, one of the biggest underlying causes of this outcome. With the narrative that energy infrastructure and the energy transition should contribute to economic growth, it has disregarded the ecological and human side of the story.

Further, as the European Commission had asserted pressure on the national government to integrate energy poverty into energy transition strategies, the energy poverty agenda has also gained traction in actors’ ideas about what energy justice entails. An important finding is that

energy poverty does not only affect low-income households. In any case, energy poverty is being recognised as an existing issue that may worsen due to the energy transition, and measures to eradicate it is needed to prevent it from affecting and delaying the energy transition.

Finally, this research revealed that different stakeholders have different views on what justness means. The problems related to what citizens may perceive as unjust — for instance, building a renewable energy installation in their neighbourhood — may on another hand be considered as just by the government or project developers because of the need for and benefits of climate action. Therefore, it was revealed that strategies that include more substantive citizen participation and communication about the transition process would foster an energy transition that is more just in the Netherlands. All in all, if there are considerable misalignments on the perceptions of justice between government and citizens, it would certainly compromise the greater objective of meeting the climate goals.

6.2 Recommendations and future research

To foster an energy transition that embeds principles of justness, several policy recommendations and points for future research are made. In terms of improving the multi-level governance structure in the context of the energy transition, more efforts are needed from the national government to realise the potential of the regional energy strategies (RES), especially with regards to allowing energy regions and local municipality to be more flexible in handling region- or municipal-specific issues. About facilitating more substantive citizen, there needs to be specific policy instruments that focus on expanding knowledge and financial support for citizens to engage in the energy transition, particularly to complement the goal of achieving at least 50% local ownership. For example, this process could begin by publicising outcomes of each RES Twente's energy workshops to allow citizens to gain more insights about the procedure of organising an energy transition. Besides, as municipal governments will be directly interacting with citizens, support from the national government in terms of finance and personnel should be adequately provided so that developed policies can be executed well on the ground level.

Building on TNO's White Paper "Energy poverty and the energy transition" (Middlemiss et al., 2020), I suggest that a more effective energy poverty policy is needed to eradicate the problem so that it does not continue bleeding into the energy transition agenda. Drawing from the fact that some interviewees were first introduced to energy poverty in the context of the United

Kingdom, Dutch policymakers could learn from neighbouring countries to better understand the problem at hand. For example, looking at what indicators other countries are using to measure energy poverty, the Netherlands can draw inspiration and develop a fruitful indicator which combines different aspects of energy, such as 10% energy expenditure, housing energy labels, and others (Middlemiss et al., 2020). However, to do this, it is evident that a consensus is needed among all governance levels regarding the definition of energy poverty. A more comprehensive study to measure energy poverty in the Netherlands is needed, and there is great value in utilising an intersectional lens to aid this endeavour. For example, besides Feenstra and Özerol's (2021) efforts in understanding the energy problem from a gender perspective, it could be useful to consider other social and political identities such as race and ethnicity and when tackling the energy poverty problem.

Finally, there are questions that arose from this research but remained unanswered: to what extent does an individual's perception affect their work in an organisation such as a government body? Who is (financially) responsible for the energy transition? If inequalities are inevitable in society, what are the criteria that can determine the justness of the inequality? All of these questions relate to ethical issues or philosophical positions that require further exploration. Future research could also consider a merge of quantitative and qualitative research involving a wider group of respondents with more diverse background. As the findings of this research have revealed the large role of the national government, future research should investigate the perceptions of government employees on the national level to obtain a more comprehensive view of the Dutch energy transition strategies. In addition, the perspectives of other stakeholders such as citizens should also be explored to investigate and address the misalignments of justice perceptions. The role of ideology in justice perceptions would also be interesting as it was revealed in the findings that social and political influences affect perceptions surrounding the Dutch energy transition and the concept of justice. By extending this explorative study with more specific questions based on the themes that emerged, a deeper understanding of each theme could also be obtained to develop more directive policy recommendations.

6.3 Reflection on methodology

Throughout the course of this explorative research, I have had plenty moments of deliberation about my research methodology. During the weeks of data gathering, I was exposed to new perspectives and ideas with every new interviews. This was certainly exciting, but the time limitation has certainly been a reminder for myself that I cannot learn everything and put everything in my thesis. Below are some of the reflection points on the research methodology:

Currently, selected interviewees consist of municipality employees, provincial employees, and a city council representative. Some of the interviewees were attendees of the energy workshops and others identified through snowball sampling method. The limitation identified here is that this group comprises of actors who are more interested in the topic which can result in self-selection bias. To explore perceptions of energy justice it would have been more inclusive to have participants of various backgrounds to obtain the perspectives of a more diverse group of people (i.e., different race, gender, etc.).

Finally is my reflection on my experience with the ordinary language interviewing method. The intention to induce meanings in interviewees' language did not work as smoothly as I wished because of my inexperience. I found that I may have had to clarify the purpose of my research better to interviewees. My phrasing of questions was perhaps sometimes unclear to interviewees because the responses were at times not coherent with the intentions of my questions. However, this is also likely due to the language barrier from both sides. This improved after a couple of interviews; but during the data analysis phase, reading the transcripts repeatedly revealed many moments that I could have probed further to obtain more in-depth answers. If there was more time, I would request for second interviews with interviewees. For this research, I dealt with this by reaching out to interviewees through email to clarify some of my doubts.

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Appendix

Appendix 1. Information sheet and Consent Form

Information sheet for Master thesis research

Purpose of the research

This research is led by Pin Ni Yoong, student in the Master of Environmental and Energy Management at the University of Twente. The purpose of this study is to investigate the relevance of justice concerns in the Dutch energy transition. The research data collected will be used to produce the researcher's master thesis report.

Procedure

You are participating in a study where information will be collected by a semi-structured interview where your answers will be recorded via audio/video recording. A transcript of the interview will also be prepared for further analysis.

Potential risks and inconveniences

During your participation in this study you may be asked questions that you may experience as (very) personal, due to the sensitive nature of the subject. These questions are asked solely in the interest of the investigation. However, you do not have to answer questions that you do not wish to answer. Your participation is voluntary and you can stop your participation at any time.

Compensation

You will not receive any compensation for participating in this study.

Confidentiality of data

No confidential information or personal data of or about you will be released in any way that would allow anyone to recognise you. You have the right to request access to and rectification or erasure of the data collected.

Before the research data is made public, your data will be anonymised as much as possible, unless you have given explicit permission for your organisation to be mentioned in our consent form, for example with a quote.

The audio/video recordings, forms, and other documents created or collected as part of this study are stored in a secure location at the University of Twente and on the researchers' secure and encrypted data carriers.

The research data is kept for a period of four (4) months. After this period, the data will be deleted and can no longer be traced back to a person.

Finally, this research has been assessed and approved by the ethics committee of the Behavioural, Management and Social Sciences at the University of Twente.

Voluntary

Participation in this research is completely voluntary. As a participant, you can stop participating in the study at any time, or refuse to allow your data to be used for the study, without stating reasons. Stopping participation will not have any adverse consequences for you.

Do you want to stop the research, or do you have questions and/or complaints? Please contact the researcher.

Researcher name: Pin Ni Yoong

E-mail: yoongpinni@student.utwente.nl OR yoongpinni@gmail.com

Consent Form for Master Thesis Research
YOU WILL BE GIVEN A COPY OF THIS INFORMED CONSENT FORM

Please tick the appropriate boxes

Yes No

Taking part in the study

I have read and understood the study information dated 10/06/2022, or it has been read to me. I have been able to ask questions about the study and my questions have been answered to my satisfaction. Yes No

I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason. Yes No

I understand that taking part in the study involves an audio-recorded interview using a recording device that will be transcribed into text for further analysis in the research. If interview is conducted online, Microsoft Team's video and audio recording and transcribing functions will be used. After the research, precisely after the final submission of the thesis report, all recording will be destroyed as the data no longer serves any purposes outside of the research. Yes No

Risks associated with participating in the study

I understand that taking part in the study involves the following risks: mental discomfort due to the sensitive nature of the subject. Yes No

Use of the information in the study

I understand that information I provide will be used for the researcher's master thesis report on the topic of energy justice and the energy transition. Yes No

I understand that personal information collected about me that can identify me, such as [e.g. my name or where I work], will not be shared beyond the study team. Yes No

I agree that my information can be quoted in research outputs. Yes No

I agree that my organization's name can be quoted in research outputs. Yes No

Appendix 2. Interview Guide

Introduction

- This research is about exploring the concepts of energy justice within the Dutch energy transition strategies. I would like to talk to you about how you perceive the justness of the Dutch energy transition strategies.
- “Perceive” definition:
 - become aware or conscious of (something); come to realize or understand.
 - interpret or regard (someone or something) in a particular way.
 - Synonym: *view, recognize, think of, consider...*
- Structure of the interview:
 - First, the questions will be more open-ended.
 - Then, in the second part, I have questions that are more specific based on your role in the [organisation].

Open-ended questions (OLI)

- Do you think the Dutch government’s energy transition strategies are just?
 - Why do you say that there is/is not? [Elaboration prompt]
 - How so?
 - Can you give a specific example?
 - Why is/isn’t there justness in that?

Table A1. Types of follow-up questions (Schaffer, 2019).

Types of questions	Purpose	Examples
1. Judgement question	Allow interviewee to express opinions that reveal standards implicit in a term	<i>Is “x” good or bad?</i>
2. Elaboration prompt	Allow interviewee to flesh out or amplify what they were saying	<i>Can you explain? How so?</i>
3. Example prompt	Allow interviewee (and interviewer) to think more about the question at hand	<i>Can you give an example (from national politics, your community, personal experience, etc.)?</i>
4. Internal logic question	Allow interviewee to reflect more deeply about what they are saying	<i>Earlier you said “x”, but now you seem to be saying “not x”. Can you explain what you mean by “x” and “not x”?</i>

5. Restatement question	Allow interviewer to confirm that she understands what the interviewee is saying, and also demonstrate to them that she is listening attentively	<i>If I understand correctly, you are saying that “x” is, is that correct?</i>
6. Direct question	Allow interviewer to ask explicitly what the interviewee understands the meaning of term “x” to be	<i>What do you think “x” means? To you, what is “x”?</i>

Semi-structured questions

1. What is your current role in the [organisation]?
2. What are some initiatives that are related to addressing the justness of the energy transition?
3. What does “energy justice” mean to you?
4. What does “energy justice” mean in the context of the energy transition in the Netherlands?