Reconceptualising Energy Justice in light of Normative Uncertainties
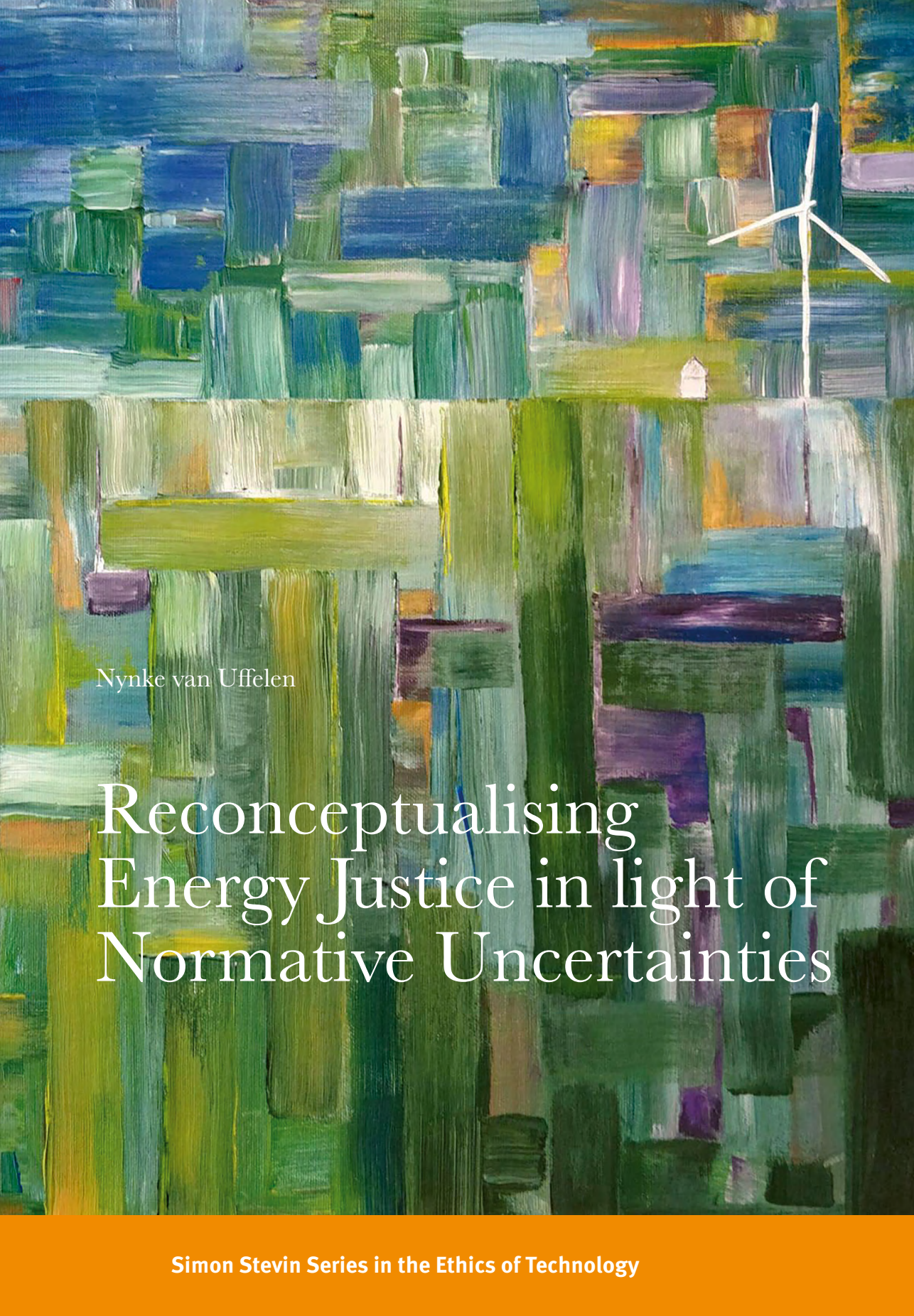
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Nynke van Uffelen

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Dissertation

for the purpose of obtaining the degree of doctor
at Delft University of Technology
by the authority of the Rector Magnificus Prof.dr.ir. T.H.J.J. van der Hagen
chair of the Board for Doctorates
to be defended publicly on
17 January 2025 at 10:00 o'clock

By

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Chapter 2

N. van Uffelen, B. Taebi, U. Pesch (2024), Revisiting the Energy Justice Framework: Doing Justice to Normative Uncertainties, in *Renewable and Sustainable Energy Reviews*, vol. 189A, pp. 1-8.

Chapter 3

N. van Uffelen (2024), Understanding Energy Conflicts: From Epistemic Disputes to Competing Conceptions of Justice, in *Energy Research and Social Science*, vol. 118, pp. 1-10.

Chapter 4

N. van Uffelen (2022), Revisiting Recognition in Energy Justice, in *Energy Research and Social Science*, vol. 92, pp. 1-7.

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N. van Uffelen, The Dangers of Recognition for Environmental Justice, submitted in July 2024.

Chapter 6

N. van Uffelen & S. ten Caat (2025), Detecting Energy Injustices: Climbing the Ladder of "Hidden Morality", in *Energy Policy*, vol. 198, pp. 1-11.

The co-authored papers are written with researchers at Leiden University and the Ethics and Philosophy of Technology section at Delft University. Co-authors have given their permission to use the papers in this dissertation.

Acknowledgements

Similarly to energy systems, my dissertation is relationally constituted. I could not have made this book without the help and support of many, many wonderful others.

First, I want to thank my promotor, Behnam Taebi, and my co-promotor and daily supervisor, Udo Pesch. Yes, you are the best supervisors in the whole wide world! (Happy, Udo?) Thank you both for giving me the opportunity to work on this topic and for your trust in me, your patience, your encouraging words, and the space that you have given me to explore and find out where my heart lies in research. Thanks to you both, I have fallen in love with doing research. I am incredibly grateful for your critical feedback, but also for the compliments and encouragement you have given me in the past few years, which is a style of supervision that I greatly appreciate. Udo, thank you for making so much time for me on a weekly basis. I remember freaking out in my first month, to which you said: Nynke, chill, just read, have fun, and figure out what you like – which was the best advice ever, and I will continue to work this way. I have always felt I could discuss anything on my mind, including struggles with interdisciplinarity and questions about the social role of philosophy. From you, I have learned that I should follow my gut and write about what is important, no matter whether or not it fits into a disciplinary box. Behnam, a very big thanks for all the opportunities you have given me in the past few years. Thanks to you, I have not only developed myself as a researcher, but also as a public speaker, a policy advisor, and as a science communicator. Your everlasting honesty and critical gaze have made me a better researcher.

I would also like to thank my promotor, Martijn Groenleer, for your openness and kindness, and for including me in the yearly PhD days, which have been incredibly inspiring and fun. In extension, I want to thank my colleagues within RELEASE, and all the industry partners and field labs involved in the project, for their feedback during the UC meetings and their intellectual curiosity. In this, I would like to give a big thanks to my colleagues from RL2 WP2B, and in particular to Anieke Kranenburg and Mahshid Hasankhani, with whom I started this PhD trajectory. I also want to thank my commission for reading my dissertation and for their constructive feedback.

A very big thanks to Nick Pidgeon, Chris Groves, who welcomed me in Wales, Cardiff for a three month research visit in the fall of 2023. This research visit has been incredibly inspiring, thanks to both Nick and Chris, but also their research group, including Karen Henwood, Gareth Thomas, and many others. Thank you for the

warm welcome, and for giving me the opportunity to present my (ongoing) research, providing elaborate feedback, recommending literature and new perspectives, encouraging me to continue on this path, brainstorming about relationality and energy, and introducing me to the Welsh context, which has thoroughly shaped my thinking on energy justice and recognition.

I have thoroughly enjoyed the past few years, and I am incredibly thankful to many, many lovely colleagues who supported me in many ways. Within the TU Delft, I would love to thank Caroline Bollen for her friendship and support without measure. I want to thank Karen for her optimism and hospitality, Ben for his everlasting support whenever I had PhD questions and for bringing me chocolates after the ½ marathon in The Hague on Robert's request, and Lieke and Sara for many valuable and heartfelt conversations. I have too many awesome colleagues to list here, so I want to thank EPT's PhD students, postdocs, and scientific and support staff, for their kindness, feedback, and support. I met most of you during the COVID-19 pandemic, and despite the online environment, I have felt very much at home in our section from the start. I also want to thank my colleagues from the 4TU Ethics community. A very special thanks to Céline and Anna, who have become good friends over the past few years, and to Alessio and Cindy, who – together with Céline – were my fellow 4TU Ethics PhD representatives in 2022.

I would also like to thank all my co-authors, from whom I have learned so much throughout each collaboration. Thanks to Sander ten Caat and Eefje Cuppen for their enthusiasm about the hidden morality project. I am also very grateful to Daniel, Giovanni, Roman and Lorenzo for our many meetings in which we developed and nuanced our ideas on energy abundance. This has been a true passion project, and I have learned loads from you all. Many thanks to Nathan, Giovanni (again), Anders, Christine, Joohee, and Salome, for our many stimulating conversations on energy justice.

With many of my colleagues and co-authors, I have had the pleasure of exploring fascinating conferences and places. I will forever remember running on the beach, drinking whiskey on a wall, and dancing the cèilidh in St. Andrews; being a tourist in Leuven and Lyon; watching the parade in Madrid; eating molotes in Mexico, spinatknödeln in Innsbruck, curry pizza in Arizona, pasta and pinta in Karlsruhe, fish 'n chips in Manchester, and nachos in Groningen; and drinking room temperature ale and mulled cider in Cardiff.

I also want to shout to all the people I have interviewed. Thank you so much for making the time to participate in my research, and for opening up to me about your

concerns, worries, and emotions. I really appreciate this, and without you, this dissertation would not have come together the way that it has.

My research has also been shaped by several reading groups, and as such I would like to thank all my colleagues from all the reading groups I was and am involved in, the Werkgroep empirische ethiek and the following EPT clusters: philosophy of emotions and environment and sustainability, led by James Hutton; social and political philosophy, led by Mandi Astola; and empirical philosophy, led by Olya, of whom I am incredibly grateful for the many opportunities that she gave me, and for constructive feedback and words of encouragement.

My past endeavours have shaped who I am, and there are a few people and organisations I would like to thank. First, I want to thank meneer Dijkstra, meneer Kaan, mevrouw Leeuwerik, meneer Hovestad and Albert Dam, who were my teachers at the Meander College in Zwolle. Not only have they inspired me to pursue the humanities and philosophy; their teaching methods and enthusiasm continues to inspire me to be a better teacher. Second, I want to thank VEFO (Vlaams Netwerk voor Eigentijds Filosofieonderwijs), and specifically Griet Galle, who – as my master thesis promotor – has been greatly influential in shaping my ideas around philosophy education. Next, I want to thank the board members of VvEN (Vereniging voor Ethici Nederland) for their trust in me, and for dedicating the Toekomstverkenning 2024 on energy ethics. Also, I want to thank UCSIA for giving me the time, space, and resources to explore climate justice as a topic. Thanks to you all for your friendship and support. Lastly, I want to thank all of my co-editors of Streven Vrijplaats for all the inspiring and fun editorial meetings and our yearly dinners.

What would live be without friends? I want to thank Roos and Rosalie for being incredibly cool and badass people. The levels of our friendship run deep, and I am incredibly grateful to have you in my life throughout the fun and the tough stuff. Gisa, Claudia and Merle, for tolerating me for sixteen years already, and for your undying friendship, support, and levels of crazy. Thanks to my wonderful friends in and around Mechelen: Pauline, Tato and Martijn, Inez and Matthias, Dries and Evelyn, Very and Lucas, Stephanie and Sander, and many others. Our boardgame sessions, walks, runs, fries eating nights, arts and crafts moments, and hangouts always make my day! And finally, thanks to Manouk, whose optimism and strength continue to humble me.

I also want to thank my dear philosopher friends with whom I have studied at the KU Leuven. Lien, Ana, Arthur, Vincent, Vinsent, Brecht, and Ward, thanks for always challenging me (and each other, all the time, non-stop, constantly, continuously) intellectually, especially during yearly weekends in the Ardennen that

would tire anyone outside this group. One of our favourite topics of discussion is the social role of philosophy, and our bold exclamations such as 'Let's organise a conference!' actually resulted in the PIRC conference. You have co-shaped my outlook on philosophy, and, in general, on life.

More thanks than I can count to go my parents and my brothers and sisters. Willemien and Anita, thank you so much for always listening to my long monologues about my work, and for our stimulating late-night Berenburg-based conversations about social justice, religion, and life in general. You have taught me that life is really about love, about giving it and receiving it, and that our goal should be to make life a bit more beautiful. You keep me grounded. A special thanks to Anita for fixing my Dutch summary with your superb text editing skills. Linde, a thousand thanks for showing me how to never give up, no matter how bad things get. Pim and Jasja, thanks for being awesome and always cheering me up. Stijn and Ester, thank you for being yourself and for being simply badass in everything that you do. I want to thank Papa, Amanda, Peter and Johan for supporting me and for being proud. A very special thanks goes to you, papa, because of your deep care for our planet. Without your endless efforts to wash all jars before disposing them, take us birdwatching and pollarding willows, keep bees, and force us to work in the garden, I would never have touched upon the topic of energy justice. I also want to thank opa and oma. Opa has taught me the beauty in nature and the intrinsic value of knowledge. Oma, thank you so much for your support and our lovely videochats, which bring me so much joy. I also want to thank Sandra and Robert for welcoming me into your family and for your incredible support and love.

Last but not least, I want to thank Robert. You have been my rock. You talked every down into an up, and your faith in me has carried me these past few years. You treat me as a badass, and that makes me feel like one. With you, I can take on the world. Thank you for letting me be myself and loving me unconditionally.

I consider myself lucky to be surrounded by so many magnificent people.

Prologue

In the morning, I wake up by the sound of my alarm clock on my phone. I brush my teeth with an electric toothbrush, take a hot shower and grab some yoghurt from my fridge. Then, I travel to work and turn on my laptop. All of these activities are made possible by energy. Energy not only provides the electricity for my devices. It also enables the production of all the artefacts I use to live my life.

Most people in the Netherlands, and in other Western countries for that matter, take energy for granted in their daily lives. Only when it 'breaks' do energy systems shift from the background onto the foreground of awareness (Idhe, 1990). Such breakdowns occur in the case of black-outs, or when energy becomes or might become expensive or scarce. We become aware of energy when its infrastructures are visible, cause damage to our houses, or when its resulting pollution threatens (the good) life on planet Earth.

For most people on planet earth and specifically in the global south, however, energy is a daily concern. Some go into mines to make a living. Others use firewood to cook and suffer its health consequences. Some communities are close to power plants or heavy industry and suffer from the pollution resulting from the production of energy. Other communities suffer the consequences of the energy consumption of others through the effects of climate change.

Whether we notice it or not, energy systems have a pervasive impact on our lives. They shape and enable certain lifestyles and fulfil many basic human needs and wants, yet they simultaneously hinder the well-being of many others. Energy systems make a just world possible but also contribute to severe injustices. As such, energy technologies are not value-neutral or innocent. They are the product of human values, interests, needs, wants, and power relations. Energy systems are institutionalised social relations. In turn, energy systems co-shape values, interests, needs, wants, and power structures. Without critical reflection, the co-creation spiral of society and energy technology spins without end, and with severe unjust consequences for those without power. It has become crucial to reflect on energy systems from a justice lens.

1. Introduction

One of the biggest challenges of our time is enabling a transition from a fossil-based energy system to a sustainable one based on renewable energy sources. However, the supply of renewable energy fluctuates, because the sun does not always shine and the wind blows with irregular strengths. To tackle this intermittency, tremendous amounts of energy storage capacities are needed, such as batteries and power-to-gas applications such as hydrogen production and storage (Gallo et al., 2016; Schmidt et al., 2019; Verzijlbergh et al., 2017). However, large-scale energy storage faces many technical and economic challenges, including scarcity of materials, high costs, large ecological footprints or geographical barriers.

Besides technical challenges, developing, deploying, and governing large-scale energy storage also involves societal and ethical challenges. For example, the choices concerning the materials of energy technologies, the modes of production of energy, as well as the locations energy infrastructures have strong ethical dimensions (see for example Taebi, 2011; van de Poel et al., 2020). The energy transition is also prone to exacerbating existing inequalities in society because the financial capacities necessary to invest in renewable energy technologies, insolation, and climate adaptation are unequally distributed amongst households and countries. Energy storage can reinforce this effect, as the wealthiest actors are better positioned to invest in energy storage technologies, increasing their flexibility capital and, thus, their financial gains (Powells & Fell, 2019). Moreover, the benefits and burdens of energy transitions and infrastructures are often distributed unequally, as are the capabilities to contribute to decision-making.

These social and ethical challenges reveal that energy storage systems are not purely technical and neutral institutions. Instead, they are *sociotechnical* systems, as they contain both social and technical elements, and they are "socially constructed and society shaping" (Thomas P. Hughes, 1987, p.1). Social, economic, ethical, and political factors shape energy systems and technologies, such as power relations, cultural norms, and ideas about justice and the good life. Additionally, energy systems and technologies co-shape these same factors as they redefine what is understood as human needs (Marcuse, 1964; Shove & Walker, 2014) or how power is distributed (de Graaf et al., 2020). Because energy systems have a pervasive impact on our lives and the planet and are shaped by actors with social values and ethical assumptions, it is crucial to critically reflect on them.

Such a critical reflection is a part of the RELEASE-project, in which this PhD project is situated. RELEASE focuses on the technical and social challenges concerning renewable large-scale energy storage, specifically regarding hydrogen production, flow batteries, and hydrocarbon production from CO_2. As such, it includes work packages focused on engineering, and on the ethical and governance challenges. This dissertation focuses on the normative and ethical aspects of critical reflection on energy storage as a socio-technical system.

Within such a critical reflection, *justice* is a key concern. Political philosophers link justice to *institutions*. In this, institutions are understood very broadly as "any structures or practices, the rules and norms that guide them, and the language and symbols that mediate social interactions within them", which certainly includes energy storage systems and energy systems in general (Young, 1990, p. 22). John Rawls famously stated that justice is "the first virtue of social institutions", indicating that only institutions – excluding, for example, individual actions – can be considered just or unjust (Rawls, 1999). Moreover, Iris Marion Young argued that "the concept of social justice includes all aspects of institutional rules and relations insofar as they are subject to potential collective decision" (Young, 1990, p. 16). The concept of 'justice' certainly applies to energy systems, as they can contribute to a just world but also cause severe injustices.

To design and govern energy storage for justice, it is vital to conceptualise justice in energy contexts. In 2013, 'energy justice' was proposed as a research agenda inspired by environmental justice literature (Bulkeley et al., 2014; Fuller & Bulkeley, 2013; McCauley et al., 2013; Schlosberg, 2007; Walker, 2011). Energy justice represents a concern for justice in the context of energy systems, and it can be seen as an 'applied justice' scholarship in which the empirical contexts of energy systems emphasize specific normative issues or questions.

However, considering energy justice in relation to designing and governing energy storage is no easy feat, which brings us to the research problem that motivates this dissertation. Given that there is moral plurality in society, with people often having different ideas about what 'justice' is (Bombaerts et al., 2023; Laes et al., 2023; Wood & Roelich, 2020), the energy transition often involves conflict, competing claims of (in)justice, and experiences of misrecognition. In other words, *normative uncertainty* exists about what 'justice' implies for designing and governing energy storage systems (Taebi et al., 2020). Consequently, it becomes unclear what to design for, whether the (anticipated) consequences of energy storage technologies are ethically (un)acceptable, which policies or regulations are just, and which claims of (in)justice are justified.

Ultimately, a coherent conceptual toolkit to address normative uncertainty in energy justice is lacking. From this, we arrive at the main research question in this dissertation, which reads: *How to reconceptualise energy justice in light of normative uncertainties*?

The goal of this research is to strengthen the energy justice scholarship by constructing a vocabulary for energy justice that is applicable in the context of energy storage by adding insights derived from political philosophy combined with qualitative empirical methods. In the next section, I will first engage with the energy justice scholarship and introduce some of its most salient challenges. Subsequently, I will introduce the subquestions contributing to the main research question and their methodologies. Lastly, I will present an overview of the chapters in which the research questions will be answered.

1.1. Energy Justice

Concerns for the ethical aspects of energy systems are not new. Already in the 1970s and 1980s, scholars discussed justice in relation to energy systems, although not under the banner 'energy justice' (Jenkins et al., 2018). Moreover, academic fields such as climate justice or climate ethics focus on ethical questions surrounding climate change caused by energy production and consumption (Farah & Lo Giudice, 2023; Gardiner et al., 2010). Additionally, environmental justice scholars focus on understanding the grievances of environmental justice movements, and many of these grievances revolve around energy infrastructures (Day et al., 2016a; Walker, 2011; Walker & Day, 2012). The first articulation of energy justice in the academic literature dates from 2013, in McCauley et al.'s call for a systematic research agenda to apply concepts of justice to energy systems and policies (McCauley et al., 2013). Quickly after, other articles affirmed the need for such an agenda (Sovacool, 2014; Sovacool et al., 2016). In the following decade, academic contributions have skyrocketed (Si, 2022).

Broadly, the scholarship has two objectives. On the one hand, some scholars have descriptive aims, as they try to describe and understand grievances, energy conflicts, and resistance in terms of justice and explain what causes these phenomena. On the other hand, most scholars aim to evaluate energy systems, policies, and technologies in terms of justice and to prescribe a course of action to policy or design. McCauley *et al.* stated that the field "aims to provide all individuals across all areas with safe, affordable and sustainable energy" (McCauley et al., 2013). This aim is normative (evaluative and prescriptive) in nature. In sum, energy justice scholars are concerned with the world as it *is* (descriptive) and how it *ought to be* (normative).

1.2. Energy justice frameworks

To achieve either goal, scholars leverage energy justice frameworks as conceptual, analytical, and decision-making tools (Sovacool & Dworkin, 2015). A first category of frameworks constructs different tenets of justice, which can be seen as 'categories' or 'concepts' of justice. This tenet-approach is inspired by David Schlosberg, who argued that the grievances of environmental justice movements in the United States of America can be understood as a combination of misrecognition and procedural and distributive injustices (Schlosberg, 2004, 2007). Inspired by Schlosberg, McCauley *et al.* proposed to apply this three-pronged approach, including distributive, procedural, and recognition justice, to energy systems and policies (McCauley et al., 2013). In this, *distributive justice* refers to the just distribution of goods, and of burdens and benefits; *procedural justice* refers to just decision-making procedures; and *recognition justice* is most often defined in terms of fair representation, freedom from physical threats and complete and equal political rights (McCauley et al., 2013).[1] The three tenets are often used to fulfil normative aims through a "what, who and how"-approach: "if injustice is to be tackled, one must (a) identify the concern – distribution, (b) identify who it affects – recognition, and only then (c) identify strategies for remediation – procedure" (Jenkins et al., 2016).

In 2017, Heffron and McCauley proposed to add a fourth tenet to this framework, namely *restorative justice*. The authors presented restorative justice as a "dimension" that can be applied at each "phase", referring to the three tenets (Heffron & McCauley, 2017). However, most scholars use or describe restorative justice as a fourth and separate tenet (Lacey-Barnacle et al., 2020; Siciliano et al., 2018). Restorative justice is generally defined as repairing "the harm done to people (and/or society/nature)" (Heffron & McCauley, 2017, p. 660). Moreover, some scholars adopt *cosmopolitan justice* as a fifth tenet of justice, which is frequently understood as "each individual person has inviolate worth that must be respected and protected" (Sovacool & Dworkin, 2015, p. 440) or as an endeavour to foster "meaningful global change specifically in energy behaviors and attitudes" (Heffron et al., 2015, p. 170; LaBelle, 2017).

A second type of framework takes a principled approach. A principle-based framework lists principles or values that are important in energy systems, such as availability, affordability, due process, good governance, sustainability, intergenerational equity, intragenerational equity, responsibility, resistance, and

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[1] In Chapter 3, I will elaborate on the various definitions of recognition justice that circulate, and how some of them are conceptually problematic.

intersectionality (Sovacool, 2013; Sovacool et al., 2016, 2017). These principles have been specified by the authors as "values underpinning our energy decisions" (Sovacool, 2013, p. 218) or as decision-making principles (Sovacool & Dworkin, 2015) that jointly contribute to energy justice.

Both types of frameworks are leveraged to achieve the descriptive and normative aims of energy justice scholarship. The tenets or principles are either used to evaluate phenomena in terms of justice and to prescribe a course of action, or to explain resistance and conflict. Versions of the tenet-based framework are used in approximately 61% of all energy justice studies, while the principle-based framework was adopted in 9% (Jenkins et al., 2021).[2] Altogether, energy justice scholarship has achieved many successes, such as putting energy and fuel poverty on the political agenda and making visible severe injustices through case studies worldwide (Heffron, 2023).

1.3. Objections and challenges

Energy justice is a relatively young academic scholarship, and it has received several fundamental conceptual critiques that can be clustered into three main objections.

The first objection points out that energy justice has neglected its activist past and as such, the tenet-framework is often applied in inappropriate ways. Already in 2016, Fuller and McCauley claimed that there is "little interrogation of energy justice in relation to actions undertaken by activist and advocacy movements" (Fuller & McCauley, 2016, p. 1). Four years later, Galvin argued that energy justice should be more aware of the roots of the word 'justice', which – according to the author – should be defined as "the dynamic of an oppressed people rising up against their oppression, at their own initiative, by means of persistent direct action that includes a full range of nonviolent tactics" (Galvin, 2020, p. 3). Wood and Roelich argued that the tenet approach cannot be applied top-down because it stems from an analysis of environmental justice movements (Wood & Roelich, 2020). Moreover, forgetting the activist origins of the tenet approach "omits the explanatory interconnections between these three dimensions" and "conceals the depth and debate underpinning each separate dimension" (Wood, 2023, p. 1). In a similar vein, Astola et al. argued that the tenets are not independent, as distributive injustice can be compensated with

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[2]   Most other contributions mention no explicit theoretical approach (N = 20); other theoretical approaches include cosmopolitanism (N = 9), other (N = 8), prohibitive and affirmative justice (N = 1), and universal and particular justice (N = 1).

procedural justice and vice versa, and as a result, "no conclusions can be drawn about one [tenet], without drawing conclusions on the others" (Astola et al., 2022, p. 45).

A second cluster of critiques focuses on pluralising energy justice. Several authors have stressed the importance of taking into account more non-western and non-anthropocentric notions of justice (Jenkins et al., 2021; Jenkins, Spruit, et al., 2020; Lacey-Barnacle et al., 2020; Sovacool et al., 2017). These frustrations culminated in a perspective paper on pluralizing energy justice, in which the authors claim that energy justice "fails to adequately account for gender, Indigeneity, race, and other intersecting inequalities" (Sovacool et al., 2023, p. 1). This paper received a critical response by Dunlap and Tornel, who argued that pluralising energy justice should not only entail 'learning' more non-western conceptions of justice, but also more thorough critiques on statism and capitalism, leading to action instead of merely education of energy justice scholars (Dunlap & Tornel, 2023).

A third critique focuses on the normative or decision-making function of energy justice frameworks. In 2017, Sovacool et al. admitted that their principle-based framework does not resolve trade-offs between or within principles (Sovacool et al., 2017). In contrast with side-shared optimism about the tenet-framework as decision-making tool, several scholars have argued that the tenet-framework has limited applicability because it cannot solve normative challenges by itself. Jenkins and Taebi argued that the concept of energy justice does not tackle normative uncertainty, but the tenets of justice may be a starting point: "Energy justice itself cannot consider and prioritize competing demands, but as a framework, it will reveal the conflicting demands, and help decision makers, as well as other stakeholders to make informed choices" (Jenkins & Taebi, 2019, p. 191). Furthermore, energy justice scholarship has been said to have "limited application outside of academia" as there is "little reflection on how Energy Justice becomes a deliverable policy outcome" (Jenkins, Spruit, et al., 2020, p. 7). Laes et al. agreed that the tenets fail "to offer guidance in situations where the three tenets (and their underlying values) cannot easily be reconciled or be equally realised", leading to limited uptake outside academia (Laes et al., 2023, p. 4). More specifically, "More fundamental philosophical questions such as what counts as a just distribution or a fair procedure have hardly been tackled" (Laes et al., 2023, p. 3). In a similar vein, Bombaerts et al. claimed that the framework is often presented as if it can fulfil its normative aims, but in fact "the three-tenets framework needs additional normative guidance to deal with underlying value disputes" (Bombaerts et al., 2023, p. 7). Such normative guidance can come from explicitly adopting values or conceptions of justice that guide action and policy. One energy dilemma can be

framed with different moral theories, leading to different outcomes (Wood & Roelich, 2020).

To generalise, we identified two main challenges for energy justice scholarship, namely the descriptive and the normative challenge (Wood et al., 2024). In this, 'descriptive' refers to the world as it is, including its functionings and causal relations, and 'normative' refers to the world as it should be, including both evaluative and prescriptive statements (Franssen, 2009).

The *descriptive challenge* indicates that existing energy justice frameworks have limited capacities to explain, understand, and describe energy conflicts and resistance. Often, the tenets of justice are used to categorise people's claims of injustice as either distributive, procedural, or recognition concerns. However, this simplifies the interconnections between tenets of justice, and ignores that conflicts can occur within a single tenet of justice. For example, one stakeholder can say that the procedure was unjust while another disagrees and considers the procedure as just. The same goes for competing interpretations of principles such as 'affordable energy'. In case of such intra-value conflicts, existing energy justice frameworks are insufficient to understand what is at stake and as such, they lack explanatory power. Furthermore, the concepts used in the frameworks lack clarity. Most notably, energy justice scholars often adopt the notion of 'recognition justice' to explain grievances, inspired by environmental justice scholarship (Schlosberg, 2007). However, the concept is interpreted in many different ways (see Chapter 4), limiting its descriptive potential. As such, reconceptualising recognition justice remains a significant gap in the energy justice literature.

The *normative challenge* implies that there is normative uncertainty about what energy justice is due to moral plurality (either in theory or in society), and as a result, it is unclear what the 'just' course of action is or how to normatively evaluate energy systems. 'Justice' does not simply refer to a single ideal on which there is consensus, and therefore it cannot simply be measured, operationalised and implemented. On the contrary, the concept of justice intrinsically holds an intra-value conflict (Dignum, 2013), as different people have different ideas about when something is (un)just. In other words, there is one *concept* of justice, yet *conceptions* of justice are plural (Rawls, 1999). This plurality implies that there is *normative uncertainty* about what is just. Normative uncertainties are "situations where there are different partially morally defensible – but incompatible – options or courses of action, or ones in which there is no fully morally defensible option" (Taebi et al., 2020). Because there is no consensus about what (in)justice is, normative uncertainty surrounds all options that follow from

energy justice questions. Failing to acknowledge normative uncertainty implies reducing energy justice to a singular perspective that is taken as universal. This is especially problematic in the context of global power relations, as non-Western perspectives on justice tend to be overlooked.

Both challenges, I argue, can be tackled through a more thorough engagement with political philosophy. Philosophical conceptions of justice can supplement the social scientists' toolkit to analyse resistance and energy conflicts and detect energy injustices. Moreover, theories of justice can provide the much-needed justification for normative claims and policy recommendations (Linquiti, 2024; Wolff, 2013). Jenkins and colleagues argued that energy justice scholarship has largely developed separately from environmental and climate justice (Jenkins, 2018) and from established philosophical theories of justice in general (Jenkins, Spruit, et al., 2020). Bridging these academic silos can strengthen the conceptual foundations of energy justice.

1.4. Political Philosophy and Critical Theory

The rapid uptake of 'energy justice' in academia and policy holds a danger, namely that it is being reduced to a catchword or a concept with little meaning. In other words, "when the movement encompasses everything, it stands for nothing" (Green, 2019, p. 2). If this is true, then energy justice can be used to justify or dismiss a wide range of policies and innovations at will.

Is it true that energy justice simultaneously stands for everything and nothing? In other words, is it possible to formulate a grounded critique of energy systems, technologies, and policies in terms of justice and to justify policy and design recommendations, and if so, how? Such questions are core to political philosophy and its subdiscipline Critical Theory. In its most narrow meaning, Critical Theory is the kind of social philosophy done at the Frankfurt School in Germany, for example by Adorno, Horkheimer, Habermas, and Honneth. More broadly, Critical Theory is a school of social philosophy that is rooted in German Idealism and Marxist thought and aims to construct valid social critique towards social change: "It is a distinctive form of theory in that it posits a more comprehensive means to grasp social reality and diagnose social pathologies. […] It is a form of social criticism that contains within it the seeds of judgement, evaluation, and practical, transformative activity" (Thompson, 2017, p. 1). Within political philosophy and Critical Theory, resources can be found to strengthen the concept of energy justice and its use in policy, design,

and academia. Critical Theory is particularly interesting to energy justice scholarship in political philosophy for two reasons.

First, Critical Theory aims to be empirically informed. Michael Walzer argues that philosophers should not analyse the world from an objective, detached and universal standpoint, but by standing in the world and interpreting it (Walzer, 1983, p. xiv). Similarly, Young states that "normative reflection arises from hearing a cry of suffering or distress" and that "the normative ideals used to criticize a society are rooted in experience of and reflection on that very society" (Young, 1990, p. 5). More specifically, Critical Theory understands itself as "a theoretical reflection of the emancipatory movements of the age" and their grievances (Fraser & Honneth, 2003, p. 112).

Second, Critical Theory has normative and emancipatory aims (Deranty, 2013). Its scholars scrutinize on what grounds social critique is possible, in other words, how to justify claims of injustice (Fraser & Jaeggi, 2018). To do so, they make explicit and subsequently question the assumptions that people and institutions implicitly maintain. Young argues that assumptions of justice are often institutionalised, depoliticised, and seen as objective, even though they are actually particular and exclusionary (Young, 1990). As such, Critical Theory plays a role in analysing and deconstructing such assumptions. By making explicit the implicit normative assumptions in (energy) institutions and reflecting on them, Critical Theory can be emancipatory and contribute to a more just world.

Due to its empirical starting point and emancipatory aim, Critical Theory is a close neighbour to the social sciences, and to energy justice in particular. Moreover, the two features of Critical Theory resemble the descriptive and normative aims of energy justice scholarship. On the one hand, Critical Theory aims to describe and understand the injustice claims that arise within society. In other words, scholars aim to find the best concepts to understand people's grievances. In this context, the concept of recognition was proposed to better understand social movements (Fraser & Honneth, 2003; Honneth, 1995; Taylor, 1996). On the other hand, critical theorists explore how to justify claims of injustice or the "conditions of possibility of social critique" (Celikates, 2018, p. ix). Theorists have attempted to answer this question in different ways, such as Habermas' discourse ethics (Habermas, 1990), Honneth's notion of an undistorted relation-to-self (Honneth, 1995), and Fraser's concept of participatory parity (Fraser, 2000). Relatedly, Critical Theory studies whether and under what conditions social change is possible, which has undeniable relevance for just transition

studies.[3] For example, Axel Honneth explored the mechanisms that hide injustices (Honneth, 1982).

There has been little academic engagement between political philosophy, the social sciences and energy justice. Yet, to answer the main research question, engaging with all three bodies of literature is crucial. Political philosophy – and Critical Theory specifically – can be leveraged to strengthen the conceptual foundations of energy justice scholarship, which helps to achieve its descriptive and normative aims.

1.5. Objectives and Research Questions

This dissertation departs from acknowledging normative uncertainties on energy justice. By this, I mean that what 'energy justice' implies for (decisions about) energy systems is uncertain. Normative uncertainty implies, firstly, that there are competing conceptions of justice that cause the articulation of grievances and claims of injustice in society (Pesch et al., 2017). Second, normative uncertainty raises the question of 'what to do', or how to design energy technologies, systems and policy (Taebi et al., 2020). In the face of normative uncertainty, current energy justice frameworks are confronted with descriptive and normative challenges. On the one hand, existing energy justice frameworks have limited descriptive power, as they are ill-adapted to analyse the claims of injustice in relation to energy storage systems. On the other hand, the existing frameworks are insufficient for justifying normative claims and as a result, energy justice frameworks alone cannot justify policy and design recommendations that claim to make energy storage more 'just'. These challenges prevent energy justice from being applied rigorously to energy storage contexts, and to energy systems in general. As such, energy justice can benefit from a more thorough engagement with political philosophy's theories of justice, concepts and conceptual nuances. In this dissertation, I aim to strengthen the conceptual foundations of energy justice in light of normative uncertainties by leveraging both the social sciences and political philosophy. To do so, I pose the following main research question (Q) and subquestions (RQ):

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[3] Although the first wave of Critical Theory mostly denied that social change is possible, scholars in the second and third waves have been more optimistic.

RQ:	**How to reconceptualise energy justice in light of normative uncertainties?**
RQ1:	How can and should the plurality of normative opinions in energy justice decisions be acknowledged and addressed?
RQ2:	How can competing conceptions of justice constitute and possibly escalate an energy conflict?
RQ3:	How to reconceptualise recognition justice, given the philosophical literature on the concept?
RQ4:	What are the dangers of recognition for environmental and energy justice?
RQ5:	What are societal mechanisms that hide energy injustices and prevent social change?

The first two subquestions pertain to the descriptive and normative limitations of existing energy justice frameworks in face of moral plurality. In this, the first subquestion (RQ1) focuses on how moral plurality is being, and should be, acknowledged and addressed in decisions on energy justice, in academia, policy, or design, thus contributing to the normative challenge. The second subquestion (RQ2) focuses on the descriptive challenge, and addresses the limited capacity of energy justice frameworks to describe and deal with conflicts around energy policies and infrastructures resulting from competing (in)justice claims. The third and fourth subquestions focus on an important tenet of justice, namely justice as recognition. Although many researchers stress the importance of this tenet of justice for descriptive and normative reasons, it often misinterpreted and its philosophical roots forgotten. As such, the third subquestion (RQ3) aims for a better understanding of the concept of recognition justice, contributing to the descriptive and normative challenge simultaneously. The fourth subquestion (RQ4) contributes to the normative challenge by focusing on the potentially unjust aspects of seeking and granting recognition in energy contexts. The final subquestion (RQ5) highlights another reason for normative uncertainty about energy justice, namely the fact that injustices may be hidden from scholars or policymakers. As a result, a chosen course of action may be unjust for some actors, while the 'best' option may go unnoticed. This subquestion focuses on describing potential mechanisms that hide injustices, thus contributing to the descriptive challenge. This question holds relevance for policymakers, who play a vital role eliminating obstacles that hide injustices, thus contributing to more just energy

systems in the future. In what follows, I elaborate on each subquestion and its contribution to the main research question (See Figure 1).

RQ How to reconceptualise energy justice in light of normative uncertainties?

Moral plurality		Understanding recognition		Hidden morality
RQ1 How can and should the plurality of normative opinions in energy justice decisions be acknowledged and addressed?	**RQ2** How can competing conceptions of justice constitute and possibly escalate an energy conflict?	**RQ3** How to reconceptualise recognition justice, given the philosophical literature on the concept?	**RQ4** What are the dangers of recognition for environmental and energy justice?	**RQ5** What mechanisms hide energy injustices?
Normative and descriptive challenge	Descriptive challenge	Normative and descriptive challenge	Normative challenge	Descriptive challenge

Figure 1. A schematic overview of the main research questions and the subquestions in this dissertation.

The first subquestion (Chapter 2) focuses on the normative challenge of energy justice, or the limited ability to justify normative conclusions, including statements such as 'X is unjust' or design and policy recommendations. A systematic literature review will show that further normative substantiation is needed to justify normative conclusions. This chapter proposes a revisited energy justice framework that includes not only tenets of justice, but also the dimensions about which there can be normative uncertainty, namely principles, scope, and subjects of justice, the timeframe, and knowledge. This framework does justice to normative uncertainty by functioning as a reflection tool for researchers, policymakers and designers, as it helps to articulate the normative assumptions that underly normative conclusions. The framework simultaneously contributes to the descriptive challenge, as it can be used as a heuristic tool to better understand energy conflicts.

The second subquestion (Chapter 3) focuses on understanding energy conflicts, and as such it contributes to the descriptive challenge. Normative uncertainty can translate into energy conflicts and resistance, and energy justice frameworks have limited ability to understand and analyse energy conflicts. This chapter presents a qualitative thematic analysis of a case study, namely gas storage Grijpskerk (Groningen) and Norg (Drenthe) in the Netherlands. The analysis shows that the tenet framework is insufficient for understanding the core of the conflict. In line with John

Rawls, the chapter shows that distinguishing between *concepts* and *conceptions* of justice allows a more nuanced understanding of the conflict. It concludes that some conceptions are institutionalised while others are not, resulting in experiences of misrecognition that add to the conflict. In other words, this chapter contributes to the analysis of implicit institutionalised assumptions, paving the way towards critical reflection and emancipation.

The third subquestion (Chapter 4) focuses on the concept of recognition justice. This tenet is a prominent concept in the tenet-based energy justice framework for descriptive and normative reasons. Descriptively, because many political social movements nowadays voice injustice claims that go beyond maldistribution, the tenet seems to explain resistance where other tenets fall short. Normatively, it seems imperative for energy justice to 'recognise' stakeholders. However, the concept of recognition in energy justice seems to lack conceptual depth and as such, it demands reconceptualization. Chapter 4 systematically reviews the definitions and interpretations of recognition justice in energy justice scholarship, and proposes conceptual nuance by going back to philosophical literature on the concept by Axel Honneth and Nancy Fraser.

The fourth subquestion (Chapter 5) goes one step further in the analysis of recognition justice. Environmental justice movements are often concerned with energy infrastructures, and the concept of recognition is essential to understanding their concerns. However, recognising social groups may not always contribute to justice. Critics of Fraser's and Honneth's conceptions of recognition justice point towards the ambivalence of recognition. This chapter discusses four dangers of recognition for environmental and energy justice in relation to social movements resisting energy infrastructures and policies, based on literature from Critical Theory and case studies from energy social science. Stressing the dangers of recognition draws attention to the potentially unjust backdrop of social norms and identities against which claims of misrecognition are voiced, thus taking another step towards tackling the normative challenge.

The fifth subquestion (Chapter 6) focuses on the possibility of social change. Ultimately, energy justice scholarship has emancipatory aims and wishes to contribute to more just energy systems. To do so, scholars frequently study people's claims of injustice in relation to energy systems. However, there has been little explicit attention to *detecting* injustices, even though this is a prerequisite for emancipation. Injustices are often detected through explicit articulations of grievances, either in official settings or during protests. However, not all citizens participate in such events, and as such, some

injustices may remain undetected, contributing to normative uncertainty. Inspired by Honneth's notion of *hidden morality*, this chapter analyses two case studies in the Netherlands to explore potential obstacles that prevent injustices from surfacing. The resulting framework of hidden morality can help identify obstacles to detecting injustices, and as such, it contributes to energy justice's descriptive challenge.

1.6. Methodologies

To conceptualise energy justice in light of normative uncertainties, it is crucial to combine not only literature from multiple disciplines, but also different methodologies. This dissertation's general approach can be described as *engaged political philosophy* (Wolff, 2018). This overarching methodology departs from urgent societal problems, such as the energy transition, and balances empirical methods and philosophical critical reflection. On the one hand, I adopt philosophical methods such as conceptual analysis, the deconstruction of assumptions, and argumentation. On the other hand, qualitative methodologies from social science, such as interviewing, are leveraged to reconceptualise justice in specific contexts. More specifically, chapters 3, 5 and 6 include case studies on energy (storage) systems in which normative uncertainties play a crucial role.

Empirical methods are crucial for reconceptualising energy justice, because there is not one universal principle, standard, or rule that defines what is just or unjust in all contexts. Instead, there are different spheres of justice, and within each sphere in a certain space or time, justice may be conceptualised differently (Walzer, 1983). Justice in the context of energy (storage) may be conceptualised differently than justice in the context of Artificial Intelligence, or education. Moreover, what is 'just' may even differ in concrete contexts, such as local energy conflicts about a specific energy infrastructure. Conceptualising energy justice thus requires combining methods from political philosophy and social sciences with contextualised knowledge about normative uncertainties in relation to issues around specific energy systems and policies.

This dissertation is inherently interdisciplinary, and different chapters address different audiences. More specific information about the methodologies used to answer each research question can be found in the chapters, and their descriptions are tailored to the requirements of the specific journals (see Table 1). In the epilogue, I further elaborate my views on the nature of philosophy in relation to the empirical world and to the social sciences, which were shaped when writing this dissertation.

1.7. Overview of Chapters

The five chapters in this dissertation present five papers that were written as articles for peer-reviewed journals (for an overview, see Table 1). At the time of writing, Chapter 1 and 3 have already been published, and the other chapters are under review. The abstracts of the chapters summarise the content of each chapter.

Table 1. An overview of the chapters and their titles, authors, publication venues, research questions, and methods.

CH	Title	Authors	Publication	RQ	Methods
2	Revisiting the energy justice framework: doing justice to normative uncertainties	Nynke van Uffelen, Behnam Taebi, Udo Pesch	*Renewable & Sustainable Energy Reviews*	How can and should the plurality of normative opinions in energy justice decisions be acknowledged and addressed?	Systematic literature review
3	Understanding energy conflicts: from epistemic disputes to competing conceptions of justice	Nynke van Uffelen	*Energy Research and Social Science*	How can competing conceptions of justice constitute and possibly escalate an energy controversy?	Qualitative thematic analysis of semi-structured interviews
4	Revisiting recognition in energy justice	Nynke van Uffelen	*Energy Research & Social Science*	How to reconceptualise recognition justice, given the philosophical literature on the concept?	Systematic literature review and literature study
5	The Dangers of Recognition for Environmental Justice	Nynke van Uffelen	Under review	What are the dangers of recognition for environmental and energy justice?	Literature study and conceptual analysis
6	Detecting energy injustices: climbing the ladder of "hidden morality"	Nynke van Uffelen & Sander ten Caat	*Energy Policy*	What are societal mechanisms that hide energy injustices and prevent social change?	Literature study and qualitative analysis of two case studies

Chapter 2. Revisiting the Energy Justice Framework: Doing Justice to Normative Uncertainties

Energy justice is often approached through the four tenets of procedural, distributive, restorative and recognition justice. Though these tenets are important placeholders for addressing what type of justice issues are involved, they require further normative substantiations. These are achieved by using principles of justice to specify why – normatively speaking – something is just or unjust within each category or tenet of justice. In addressing the principles of justice, it is important to acknowledge normative uncertainties, or the fact that different (incompatible) conceptions of justice might be morally defensible, leading to different normative conclusions or policy recommendations. This chapter reviews the definitions of tenets in energy justice scholarship, the occurrence of normative claims, and how these claims are justified. The review shows that the scholarship ignores to a large extent normative uncertainties. In response, we propose a revisited energy justice framework, focusing on four aspects that help us to articulate the normative uncertainties in both the principles and the tenets of energy justice. These aspects are (i) the scale of justice (i.e. whether justice is considered at a local, national, regional, multinational or global scale), (ii) the subject of justice, (iii) the body of knowledge that is assumed and (iv) the time frame in which justice issues are being considered. We hope to provide a conceptual framework that make explicit the different types of normative assumptions underlying claims of justice, which will ultimately improve the quality and legitimacy of normative conclusions such as policy recommendations that follow.

Chapter 3. Understanding Energy Conflicts: From Epistemic Disputes to Competing Conceptions of Justice

Analysing energy conflicts is crucial to realise a successful and just energy transition. In doing so, it is insufficient to understand energy conflicts as epistemic disagreements about risk analyses and safety, as people often voice moral concerns beyond epistemic debates. To analyse grievances of social movements and citizens in energy conflicts, scholars often adopt a tenet-based energy justice framework that distinguishes between distributive, procedural, recognition and restorative justice. However, categorising claims into tenets does not shed light on disagreements within the tenets. As such, the existing conceptual toolkit is insufficient to understand the core of energy justice conflicts. This article proposes to shift focus towards capturing different conceptions of justice. This approach is illustrated by a qualitative analysis of the controversy around underground gas storage Grijpskerk and Norg in the Netherlands. The results

show that the conflict is constituted by competing conceptions of restorative justice. The institutionalisation of one conception delegitimises and hides certain justice concerns and reduces the conflict to an epistemic dispute, which leads to misrecognition and possibly to the escalation of the conflict.

Chapter 4. Revisiting Recognition in Energy Justice

Energy justice is often divided into three tenets of distributive, procedural and recognition justice. Recognition justice has a distinct status compared to the other two since its meaning seems the least tangible to grasp. In this article, a systematic literature study was conducted to the definitions and interpretations of recognition justice, showing that the concept currently refers to a large variety of phenomena. This diversity obscures what "recognition justice" actually measures. This chapter aims to revisit the concept of recognition justice in energy justice by asking the following question: what does the tenet of recognition justice refer to, taking into account the philosophical roots of the concept? To do so, the key texts from Axel Honneth and Nancy Fraser were studied in-depth, resulting in four key insights: (1) there are two approaches to recognition justice; (2) actors can be (mis)recognised in multiple ways; (3) two different yet complementary methods to identifying instances of misrecognition can be distinguished; and (4) recognition justice cannot be reduced to other tenets of justice. These findings cumulate in a revisited definition of recognition justice as concerned with the adequate recognition of all actors through love, law, and status order. This definition structures the large variety of understandings in the scholarship, and it has the potential to provide a more fine-grained explanation of energy controversies, and such analyses can subsequently aid the process of energy systems and policies more just, which is the ultimate aim.

Chapter 5. The Dangers of Recognition for Environmental Justice

Environmental justice scholars generally assume that recognition is just and that misrecognition should be battled. However, some environmental justice scholars recently argued that recognition is dangerous as it can reproduce colonial structures. In fact, critical theorists have articulated multiple dangers intrinsic to recognition, also beyond reproducing coloniality, that remain unthematized in environmental justice. In this paper, I argue that in some cases, legitimate struggles for recognition can still contribute to environmental injustice, in other words, recognition is dangerous or ambivalent. To make such an argument, I systematically explore the dangers of recognition by drawing on Critical Theory literature and empirical examples.

Conceiving recognition as ambivalent invites researchers to distinguish between (1) the legitimacy of claims of misrecognition and (2) the legitimacy of values, norms, identities, and outcomes that are (re)produced through seeking and granting recognition.

Chapter 6. Detecting Energy Injustices: Climbing the Ladder of "Hidden Morality"

Governing a just energy transition requires detecting and anticipating energy injustices. Although much scholarly attention has been given to frameworks to *analyse* energy injustices, a consistent framework for policymakers and researchers to *detect* them is lacking. Current methods for detecting what the publics perceive as (un)just rely on explicit articulations of grievances by citizens in official participatory settings or during energy conflicts. However, it is implausible that all injustices manifest within these contexts. This study introduces a framework to understand why injustices might remain unseen and unaddressed, inspired by the concept of *hidden morality* as introduced by the philosopher Axel Honneth. The framework of hidden morality conceptualises several steps between an injustice and social change: (1) experience of injustices; (2) expression of injustices; (3) collective action; (4) uptake in public discourse; (5) reformulation; and (6) social change. Between each of these steps, different obstacles can arise. The paper explores the mechanisms that prevent energy injustices from surfacing and being resolved through philosophical literature and two case studies. Its contribution is twofold: it raises awareness of the fact that injustices can remain undetected, and it proposes a framework that is the first systematic tool for policymakers to detect injustices when making energy policies.

2. Revisiting the Energy Justice Framework: Doing Justice to Normative Uncertainties

Van Uffelen, N., Taebi, B., Pesch, U.[4]

2.1. Introduction

There is still a long way to go to achieve the climate goals set for 2050 and 2060. Part of achieving these goals is a fundamental transition in energy systems, one that requires adopting large-scale, low-carbon energy systems, along with energy storage, negative emission technologies and so on. Such drastic changes engender important ethical issues that are frequently subsumed under the heading of *energy justice*. While the ethical aspects of energy systems were being be addressed in the environmental justice literature in the 1980s and 1990s and reappeared in more recent climate justice literature, the first explicit articulation of energy justice in the academic literature dates back only to 2013 (McCauley et al., 2013). Energy justice scholarship strives to understand what is just or unjust in energy systems, in light of fostering just energy transitions. In order to facilitate this, scholars introduced a tenet-based energy justice framework (Jenkins, Sovacool, et al., 2020). Inspired by environmental justice scholarship (David Schlosberg, 2007), this framework poses and defines different tenets, that is, areas, kinds, types, typologies or categories of justice. The most common tenets are distributive, procedural, recognition, cosmopolitan and restorative justice (Heffron & McCauley, 2017).

It is argued that this energy justice framework can function as a conceptual, analytical and decision-making tool (Sovacool & Dworkin, 2015). That is, it conceptualises and analyses (in)justices, thereby assisting citizens and policymakers in decision-making. This framework therefore has two purposes. First, it can be used to gain more insight into the reasons behind protests, resistance and controversies or to

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describe the factors that contribute to the success or failure of an energy project or policy. This approach is primarily descriptive: here, the tenet-based framework is mostly used to analyse (geographical) case studies in terms of justice (Jenkins, Spruit, et al., 2020). The second and most frequently used purpose is to see the framework as a tool to help researchers or policymakers gain insight into what can be considered just or unjust. In this sense, the framework is used to evaluate legislation, regulations or policy processes in terms of justice. This approach is therefore normative in nature, and its ultimate aim is to make energy systems and policies more just.

The normative function of the tenet-based energy justice framework seems to be its least developed aspect. For legitimate reasons, different groups of people can disagree on whether a decision-making procedure is just or on what a just distribution of benefits and burdens looks like. Such plurality amounts to normative uncertainties, or "situations where there are different partially morally defensible – but incompatible – options or courses of action, or ones in which there is no fully morally defensible option" (Taebi et al., 2020). For example, there is normative uncertainty about whether to strive for nuclear energy or not, or where onshore wind ought to be installed, due to different and sometimes competing values, value priorities, and conceptions of justice. When claims of justice diverge or even conflict, it is often unclear which claim should take precedence. As such, it is unclear how the tenet framework could function as a decision-making tool.

In the energy justice scholarship, normative issues are often considered in a rather one-dimensional way, implying that there is only one possible way to look at (each tenet of) justice. However, this overlooks the plurality of justice conceptions that exist among people and within philosophy. Several scholars have argued that normative energy justice claims are often insufficiently substantiated by normative theories (Iwińska et al., 2021; Jenkins, Spruit, et al., 2020; Wood & Roelich, 2020). According to Galvin, this leads to a dominance of Western (Rawlsian) conceptions of justice (Galvin, 2019). However, it has not yet been studied systematically whether energy justice scholars make normative claims and, if so, how these are justified.

Studying how normative claims are substantiated in energy justice is important, because normative conclusions that follow from a one-dimensional understanding of energy justice have limited legitimacy. In other words, acknowledging normative diversity contributes to the legitimacy of policy recommendations. This chapter adds to the normative rigour of energy justice scholarship by addressing the following question: How can the plurality of normative opinions in energy justice decisions be acknowledged and addressed? To answer this question, we conduct a critical

conceptual review of how normative conclusions are drawn and legitimated in energy justice scholarship.

2.1.1.   Existing literature reviews

Existing reviews on energy justice have focused on a variety of issues (for a full overview of energy justice reviews, see Appendix 1). Many reviews apply the tenet framework to issues pertaining to a specific technology or a distinct region (Amekawa, 2023; Haldar et al., 2023; Heffron, 2022; Poruschi et al., 2018; Ramasar et al., 2022; Samarakoon, 2019; Sareen & Haarstad, 2021; B. K. Sovacool, 2021; Vågerö & Zeyringer, 2023; van Bommel & Höffken, 2021; Yvonne Chivanga, 2023; Zimmerman & Reames, 2021); stress the importance of energy justice in other discourses or disciplines (Holden et al., 2021; Srivastava & Kumar, 2022; Suboticki et al., 2023); or cover co-authorship in energy justice as a scholarship (Si, 2022). Eleven energy justice review articles are conceptual reviews, most of which focus on specific concepts, namely gender (Cannon & Chu, 2021; Feenstra & Özerol, 2021), power (B. K. Sovacool & Brisbois, 2019), restorative justice (Hazrati & Heffron, 2021a), energy democracy (van Veelen & van der Horst, 2018), energy poverty (Lippert & Sareen, 2023), and the just transition (Heffron & McCauley, 2018). Four other conceptual reviews explicitly contribute different conceptual insights about the tenet framework and its normative functioning, which are of specific interest to this study.

The first and oldest conceptual review on energy justice by Jenkins et al. summarises three tenets, but it does not include the possibility of normative uncertainty about their interpretations (Jenkins et al., 2016). Another review compares energy justice, value-sensitive design, and responsible research and innovation on a conceptual level (Jenkins, Spruit, et al., 2020). This article criticises energy justice for having limited philosophical exposure by pointing at a lack of diverse (non-Western) "normative principles of just distribution" (Jenkins, Spruit, et al., 2020). Similarly, Lacey-Barnacle et al. (Lacey-Barnacle et al., 2020) review the methods, energy types, locations, and theoretical frameworks used in energy justice, and found that most principles of justice mentioned in the scholarship are Western. As such, they recommend "expanding the field to further include non-western philosophical traditions" (Lacey-Barnacle et al., 2020). Lastly, a critical review by Pellegrini-Masini et al. argues that the most accepted definitions of the tenets share two conceptions of equality (Pellegrini-Masini et al., 2020). This contribution confirms that there is inherent normativity in the way energy justice scholars define and interpret the tenets of justice.

In short, energy justice scholarship contains a strong normative commitment to making energy systems more just. However, whether, how and how frequently normative claims are being made in the scholarship has not been tracked. In other words, a review of the occurrence of normative claims, the normativity within the definitions of the tenets, the formulated principles of justice, and the relation of justification between these three elements is lacking.

2.1.2. Methodology

We conducted a conceptual review to map how the current scholarship deals with normativity. We included peer-reviewed articles in the English language, published from 2013 through May 2022, that contain "energy justice" in the title, abstract or keywords. As an additional criterion, we included only those articles that applied the tenet-based framework in a case study: potential contributions had to contain "tenet", "tenets" or "framework", and then we manually selected only those that applied at least two tenets to a case study. We used Atlas.ti to analyse the resulting 179 articles (see Appendix 2 for the full list) for the following parameters: (1) which tenets were used, (2) how the tenets were defined, (3) whether normative statements were made, for instance as either *X is (un)just* or as policy recommendations, and (4) whether and which justifications (e.g. principles of justice) were formulated for the articulated normative claims. The first two parameters were detected via Ctrl-f searches, the third was found through in-depth readings of the discussion and/or conclusion, and the fourth was determined by examining the title, abstract, introduction, and theoretical framework. Next, the insights on how normative statements are justified in the scholarship were critically evaluated against the backdrop of normative uncertainties. This critical evaluation guided the formulation of a revisited energy justice framework.

2.1.3. Structure of the chapter

The chapter is organised as follows. First, a conceptual review sheds light on how normative conclusions, such as policy recommendations or claims of justice, have been justified in the energy justice scholarship (Section 2.2). Section 2.3 then critically evaluates this practice against the backdrop of normative uncertainties. Next, Section 2.4 introduces a revised version of the tenet-based energy justice framework that helps to identify different types of normative assumptions, namely (1) principles of justice, (2) the scale of justice considered, (3) to which subjects the principles apply, (4) the body of knowledge that is assumed and (5) the time frame. This revised framework

can be used as an analytical tool to examine where exactly the normative controversy lies, which is the first step towards debating the legitimacy of claims of (in)justice. Finally, Section 2.5 presents our concluding remarks.

2.2. How the current energy justice scholarship deals with normativity

This section reviews to what extent normative statements are formulated in case studies that utilise the energy justice tenet framework, and how these are justified.

2.2.1. Whether normative statements are formulated

For the purposes of this chapter, we distinguish between two types of normative statements, namely, policy recommendations and sentences of the type *X is (un)just*, or any other formulation that evaluates a phenomenon in terms of justice. Other types of normative statements often found in research articles, such as recommendations for future research, were beyond the scope of this study. Both types of statements are normative in that they evaluate a phenomenon in terms of just or unjust (or good or bad, desirable or undesirable) or they state what should be done. Examples of normative claims shaped as *X is (un)just* are "This quasi-extractive logic does not serve energy justice because of the very unequal ability of local authorities to exploit renewable energies in France" (Emelianoff & Wernert, 2019) and "The equity issue most prominently identified in Australia was an increase in electricity prices due to subsidization" (Chapman et al., 2016). Examples of policy recommendations are "To accelerate the phase out of fossil fuels, the necessity for political action by civil society is highlighted, so as to reduce injustices in the transition, and to ensure that the transition is democratic" (Chapman et al., 2018) and "It seems reasonable to suggest that actually in Colombia the SLO [social licence to operate] should be the first point in the agenda in the 'Check List' of an Energy Project" (Heffron et al., 2021).

From the 179 articles, only four papers refrained from making normative statements. The aim of these articles was descriptive: they made no claim of *X is (un)just*, nor did they recommend a certain course of action or decision to decision-makers, such as politicians or engineers. The remaining 175 articles made at least one policy recommendation or one claim of justice, wherein a phenomenon – such as a distribution, procedure, policy, practice, system or status quo – was evaluated in terms of justice. Of those articles that used the framework in a normative way, 23 made claims such as *X is (un)just* but refrained from making policy recommendations and

seven made normative policy recommendations without making claims of justice. The remaining 145 articles made both types of normative claims.

Our review suggests that the majority of energy justice papers use the tenet-based framework in a normative rather than descriptive way. The main research aim seems to be to promote justice in energy systems and to provide recommendations for *the best course of action* in terms of justice, rather than merely describing or explaining energy-related phenomena.

2.2.2. How normative statements are justified

To study how normative claims are being justified in the energy justice scholarship, we looked at whether and how normative premises were formulated. In doing so, we tried to determine whether the underlying moral principles were made explicit, and if so, what these were.

Through the definitions of tenets of justice

Most authors in our sample adopted a three-tenet approach in which distributive, procedural and recognition justice were defined and applied (see Table 2). Tenets of justice were generally defined in two ways, which we classified as either substantiated or unsubstantiated.

Unsubstantiated definitions of tenets were generic and contained no other normative commitment than a mere concern for justice pertaining to the object of the tenet itself (procedures, distributions, recognition, restoration). Examples of unsubstantiated definitions are "Restorative justice focuses on mitigating energy injustices that have already occurred" (Hearn et al., 2021) and "distributional aspects, i.e., the social distribution of costs, risks and benefits" (Winther et al., 2020).

In contrast, *substantiated* definitions of tenets encompassed a normative idea of when something is (un)just. Examples of substantiated definitions are "Justice as recognition is concerned with the equitable appreciation of stakeholder groups involved in energy systems" (Milchram et al., 2018); "The third dimension is concerned with procedural justice, and revolves around issues of inclusion and participation, especially in policymaking and in terms of stakeholders' agency to influence the trajectory of solar energy infrastructure" (Sareen & Kale, 2018); and "equally shared costs and benefits (distributive justice)" (Martiskainen et al., 2021).

Table 2. Number of times that different constellations of tenets that were used in the contributions.

Tenets that were used	Number of papers
Distributive, procedural	17
Distributive, procedural, recognition, cosmopolitan	11
Distributive, procedural, recognition, cosmopolitan, restorative	6
Distributive, procedural, recognition, restorative	15
Distributive, procedural, restorative	3
Distributive, procedural, recognition	126
Distributive, procedural, recognition, cognitive	1
Total	179

Further analysis of tenet usage (see Table 3) showed that distributive justice was mostly defined in an unsubstantiated way, merely pointing to a need for the just distribution of burdens and benefits. Procedural justice, on the other hand, was usually defined in a more substantiated way, one that assumed a just procedure by definition necessitates the inclusion and participation of stakeholders. The same was found for recognition justice: a majority of the definitions provided a more substantiated account of what it means to adequately recognise a group of people: for example, "Recognition justice establishes individuals must be fairly represented, that they must be free from physical threats, and that they must be offered complete, and equal political rights" (McCauley et al., 2013).

Table 3. Classification of the tenet definitions used in the contributions.

	Substantiated definitions	Unsubstantiated definitions
Distributive justice	32	112
Procedural justice	90	55
Recognition justice[5]	101	26
Restorative justice	8	9
Cognitive justice	1	0
Cosmopolitan justice	14	0

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[5] We categorised a definition as *substantiated* if the definition contained an idea about when something would be a 'just' relation of recognition. However, due to the complexity of the concept and the large variety of definitions, this was no easy feat. For example, 'recognition justice means recognising vulnerable groups' is now categorised as unsubstantiated, yet it can be argued that it implicitly adheres to an anthropocentric conception of justice and is therefore substantiated.

Because unsubstantiated definitions do not articulate a principle of justice that could help determine when something qualifies as an instance of injustice, they cannot function as a normative premise for justifying normative conclusions. Instead, they are merely statements signposting the need to consider justice. Substantiated definitions, on the other hand, contain explicit normative commitments that indicate the conditions under which something can be considered just or unjust. They are therefore able to function as a normative premise justifying a normative claim, such as a policy recommendation or that *X is (un)just*.

Through the formulation of principles of justice

Normative conclusions can also be justified through the explicit formulation of *principles of justice*. Principles of justice function as rules, indicating the conditions under which something can be considered as (un)just. The principles are roughly formulated as *X is just if*. For each tenet, there are different principles that are subjects of discussion in political philosophy. For example, two principles for procedural justice are the all-affected principle (the procedure is just if all affected parties have a voice) or the coin-tossing principle (the procedure is just if we toss a coin) (Miller, 2017). Yardsticks for distributive justice vary from utilitarian principles (a distribution is just if it results in the greatest good for the greatest number) to versions of the capability approach (distributions are just if they install human capabilities (Nussbaum, 2011; Sen, 2009). Arguments for such principles are formulated in theories of justice. We elaborate on principles of justice in Section 2.4.1.

In 57 of the articles we analysed, principles of justice were given to justify normative statements (see Table 4).[6] These include the capabilities approach described by either Nussbaum or Sen (N = 21), Rawls' principles of justice as fairness (N = 3), and Fraser's principle of participatory parity for procedural justice (N = 2)[7]. Two articles adhere to principles of justice as formulated in policy documents. Several other articles (N = 25) mentioned principles such as affordability and availability, which state that energy systems are unjust if energy is not affordable or available. However, an additional normative principle is needed to justify why and in which contexts

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[6] Some articles mention multiple principles of justice.

[7] In this contribution, the author takes Nancy Fraser's principle of participatory parity as a principle for procedural justice. However, Fraser did not mean this as a principle for procedural justice but as a general principle of justice. In her philosophy, distributions of burdens and benefits – or institutionalised patterns of cultural value – are unjust if they do not allow people to participate as peers in social life, and this encompasses much more than participation in decision-making procedures.

energy unaffordability or unavailability is an injustice. For example, one could argue that affordable energy is essential for having a specific capability that is a necessary precondition for dignity in human life. Therefore, it is unclear whether principles such as affordability and availability provide sufficient justification for normative statements.

Table 4. Whether and which principles of justice were mentioned in the contributions.

No principle of justice mentioned	123
Sovacool's 8-10 principles of justice	25
Capability approach	21
Rawls' principles of justice as fairness	3
Fraser's participatory parity in social life	2
Sovacool's prohibitive and affirmative principles	2
Sen's interpretation of Bhagavad Gita	2
Reference to a policy document	2
Dignity	1
Egalitarianism	1
Good regulation	1
Health	1
Honneth's consciousness of injustice	1
Needs-based	1
The pollutor pays	1
Prima facie political equality	1
Prioritarianism	1
Utilitarianism	1
Well-being	1
Total	**190**

2.3. A critical evaluation of how normative statements are justified

It is generally problematic when a normative conclusion, such as a policy recommendation or that *X is (un)just*, is derived from empirical data without articulating a normative premise. Such situations occur if a tenet is defined in an unsubstantiated way, as in the following example: first, a claim is made, such as *distributive justice concerns the just distributions of burdens and benefits*; second, no principle of

distributive justice is defined; third, empirical data is analysed; and fourth, normative conclusions are drawn, stating that the distributions are in fact unjust and/or that policy changes are needed. This leads to the theoretical and logical problem known as the "naturalistic fallacy", which is often reiterated in moral philosophy. As an illustration of this way of reasoning, let us look at Poruschi and Ambrey's statement that "fuel poverty is emblematic of a lack of recognition and a lack of procedural justice which are wrong in themselves and are interconnected and ultimately perpetuate the production of distributional inequalities" (Poruschi & Ambrey, 2018). Their conclusion that fuel poverty is unjust seems intuitive, but it is insufficiently supported by an explicit normative premise.

A second problem emerges when no normative premise is articulated yet normative conclusions are drawn. In this case, the authors are most likely maintaining an *implicit* principle of justice. For example, when authors defined procedural justice merely as "due process", we coded it as an unsubstantiated definition. However, some authors made policy recommendations based on such definitions: for example, the recommendation for a "better inclusion of entire population in EV [electric vehicles] policies" (B. K. Sovacool et al., 2019). The authors made several implicit assumptions about justice in this normative conclusion: (a) a just procedure for decision-making in transport policy requires the inclusion of the entire population; (b) the people who should have a voice are the current citizens of the state, thereby excluding future generations, animals and non-citizens and (c) it is better to switch to EVs than to limit the growth of mobility. Not making these implicit normative assumptions explicit imposes one specific view of justice and thus leaves no room for alternative principles of justice. For this same example involving Nordic EV policies, other normative assumptions about justice could be possible: (a) decisions should be made by the wisest members of a society, perhaps through elder consultations (Antadze & Gujaraidze, 2021) (b) certain (vulnerable) groups should have more decision-making power over matters that concern them (Castillo Jara & Bruns, 2022) or (c) we should consider the global impact of decisions rather than procedural justice within Nordic countries (Sovacool & Kim, 2020). As these alternative assumptions show, sometimes different principles point in different directions, which means they cannot always coincide.

When assumptions are implicit, there is no room for debating them. This is especially problematic if the assumptions are "Western" or more common in the Global North, such as implicit assumptions about green growth versus degrowth, democratic principles of procedural justice versus religious or age-based procedures, or inclusion of human citizens versus the inclusion of voices of nature, animals or

future generations in decision-making. Decolonising the energy justice scholarship, we argue, therefore demands making explicit the normative assumptions being held when drawing normative conclusions.

A third problematic argumentation scheme defines a tenet of justice in a substantiated way but also fixates that definition, interpreting it as set in stone in such a way that there seems to be no doubt that after reading the definition, one can look at empirical data and simply measure what is unjust. However, there may be multiple interpretations of justice, especially of what a just procedure entails, what a just distribution of burdens and benefits should look like, what a proper way to recognise people is, and what a proper restoration of past injustices might be. For example, procedural justice is often defined in terms of participation, transparency and inclusion of all stakeholders. This assumes that all procedures are just only if they are participatory, inclusive and transparent. However, these concepts can be understood in different ways. For example, some people may understand the notion of inclusivity in decision-making to mean giving all stakeholders true decision-making power, while others may see it as assigning certain groups consultation rights (Bacchiocchi et al., 2022). Moreover, other conceptions of just procedures might be justifiable, such as religious procedures, indigenous decision-making practices that include consulting the elderly or the wise (Antadze & Gujaraidze, 2021) or the idea that some decisions are perhaps best made by experts without involving the public – such as how to handle the safety hazards of nuclear energy, which some scholars claim demands an autocratic decision-making procedure (Winner, 2017). Activist groups such as Extinction Rebellion, for example, seem to emphasise the urgency of the climate problem to the extent that they prefer a non-democratic takeover of climate policies to promote social justice (Galvin, 2020). There are many different principles of justice that have been formulated throughout history (of philosophy) and around the globe (in the Global North and South) that are being overlooked when defining procedural justice in a substantiated and therefore fixated way.

2.4. Revisiting the energy justice framework: Taking normative assumptions into account

In Section 2.3, we argued that there are normative uncertainties about what a just procedure, distribution, restoration measure or relation of recognition could entail. Normative uncertainty in this case refers to the fact that there might be different (incompatible) conceptions of justice that are morally defensible, leading to different normative conclusions or policy recommendations. Overlooking normative

uncertainty is problematic, because it reduces the scope of perspectives considered, which in turn leads to a reduced legitimacy for the normative conclusions, such as policy recommendations, that follow. Substantiated definitions preclude alternative conceptions of justice and therefore to possible alternative policy recommendations. To overcome such problems, we have three recommendations for adding to the normative rigour of energy justice scholarship.

First, we recommend that scholars consider the tenets of justice as categories of justice that have no more substantial content than a commitment to justice related to the object of the tenet. In other words, procedural justice is concerned with just decision-making procedures; distributive justice is concerned with just distributions of burdens and benefits; recognition justice is concerned with the adequate recognition of all actors through love, law and status order (Uffelen, 2022); and restorative justice is concerned with restoring injustices. Defining tenets in an unsubstantiated manner acknowledges that there is a plurality of possible interpretations of each tenet.

Second, as the tenets of justice in themselves are unsubstantiated, additional normative substantiations based on normative principles of justice are required if the research aims to draw normative conclusions such as policy recommendations or that *X is (un)just*. We recommend that a principle of justice is explicitly articulated to justify normative statements. This can be either a principle from an institution that is used to formulate an immanent critique or a principle that is justified through a theory of justice.

Third, there must be space to critically examine these normative premises, acknowledging that alternative assumptions and conceptions[8] of justice might exist and might lead to different conclusions about what is just and to different policy recommendations. For this purpose, we propose a revised energy justice framework that systematically categorises the normative assumptions within the different tenets of energy justice (see Table 5). In Section 2.4.3, we argue that cosmopolitanism is a normative principle rather than a tenet of justice, and for this reason, we do not include it as a separate tenet in our revised approach to the energy justice framework.

We distinguish five categories of normative assumptions: (1) principles of justice, (2) the scale of justice considered, (3) the subjects the principles apply to, (4) the body of knowledge that is assumed and (5) the time frame. Because different assumptions can be held in each category, there is normative uncertainty about which assumptions should be held. This proposed framework is an analytical tool that allows scholars and

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[8]   Here, we conceptualise a *conception of justice* as a particular set of normative assumptions (i.e., knowledge, subject, time, scale, and principle of justice).

policymakers to pinpoint exactly where the normative controversy lies or can lie, which is the first step towards reflection, deliberation and critical examination of these assumptions. In addition, this framework can be useful as a descriptive tool to describe and explain energy controversies. In the remainder of this section, we elaborate on these five types of normative assumptions.

Table 5. A revised energy justice framework that systematically categorises the normative assumptions within the different tenets of energy justice.

	Principles of justice			
Distributive justice	Knowledge	Subject	Time	Scale
Procedural justice				
Recognition justice				
Restorative justice				

2.4.1. Principles of justice

The first normative assumption in justice claims pertains to principles of justice. When actors articulate claims of (in)justice, they implicitly or explicitly adhere to a principle of justice (Miller, 2017). A principle of justice functions as a rule or a standard for considering something as (un)just: the principles are formulated as *X is just if*. Two general examples are utilitarianism (X is just if it delivers the greatest good for the greatest number) and deontology (X is just if it could be a universal law). For each tenet, numerous possible principles can be applied. Examples of principles of procedural justice are the all-affected principle (X is just if all affected parties have a voice), the representative democracy principle, the lottery principle and the coin-tossing principle (Miller, 2017). For distributive justice, possible principles vary from the capability approach (Nussbaum, 2011; Sen, 2009), to Rawls' maximin rule (Rawls, 1999) to libertarian approaches (Nagel, 2005) or to versions of egalitarianism, prioritarianism or sufficiencism (Arneson, 2013). For recognition justice, some well-articulated examples are the principle of participatory parity and the principle of an unharmed-relation-to-self (Fraser & Honneth, 2003).

Besides existing in theories of justice, principles of justice can be articulated in policy documents, in vision and mission texts, and so on. They can also be embedded in institutions and technologies (Pesch, 2021). Such principles can also be used to formulate injustices as a form of immanent critique, which is about "spelling out the deep-seated contradictions of a social order" (Fraser & Jaeggi, 2018). For example, the

free market adheres to the principle of freedom; yet if empirical data shows that freedom is not the case, then the current institution can be judged as unjust by its own standards (Fraser & Jaeggi, 2018).

When a different principle of justice is adopted, then a different conclusion might be drawn about whether something is (un)just or what policy is recommended. Thus, there is normative uncertainty about which principles should be adopted in a certain context.

2.4.2. Subject of justice

Another normative assumption that underlies claims of justice concerns "to whom" the principles of justice apply (Miller, 2017). In other words, are only humans considered as subjects of justice or are non-humans such as animals and ecological systems also considered? This question has a substantial impact on what is considered just. For example, one can see nature as input for production processes and therefore as a means to an end or one can see it as intrinsically valuable. If the position can be defended that ecosystems have more moral standing than human interests, conclusions might follow that humans have moral duties to make certain sacrifices for the sake of nature (Banerjee & Arjaliès, 2021; Wienhues, 2017).

In the current energy justice framework, animals are rarely taken into account, but if they are, it is mostly in relation to distributive justice (B. K. Sovacool et al., 2017). Inspiration for this tendency can be found in the works of Peter Singer, who considers principles of equality for human and animal interests alike (Singer, 1990), or those of Bruno Latour, who theorises about including non-humans such as animals, plants and the earth in decision-making procedures in an actor-network theory, thereby giving non-humans a voice (Latour, 2017; Pesch, 2022). So far, a theory about non-humans and recognition justice remains largely unexplored (David Schlosberg, 2007; Schlosberg, 2012).

2.4.3. Scale of justice

Another category of normative assumptions is the scale of justice (Miller, 2017), which refers to the (politics of) scale, place or geographies (Whitehead, 2003). This means considering whether we contemplate justice at a local, national, regional, multinational or global scale. In other words, are we talking about energy justice in a particular place or about multinational (K. E. H. Jenkins & Taebi, 2019) or universal

energy justice; "what scales (e.g. jurisdictional, spatial and temporal) are [being] used to assess impacts and benefits?" (Williams & Doyon, 2019).

When a different scale is assumed, different normative conclusions might be drawn. For example, one can assume a global scale, which refers to the position of cosmopolitanism. Currently, cosmopolitan justice is considered as a tenet in the literature. However, in political philosophy, cosmopolitanism is considered a normative principle of justice, which includes an inherent normative recommendation regarding how to perceive of justice. Although there are many different versions of the principle of cosmopolitanism, their common core is the normative stance that "all human beings, regardless of their political affiliation, are (or can and should be) citizens in a single community" (Kleingeld & Brown, 2019). In its strongest version, cosmopolitanism indicates that justice principles apply to all humans equally and that no feature should restrict the scale of justice. Thus it leads to the delegitimising of state institutions and to radical global redistributions. In its weaker forms, nation-states are considered as legitimate entities for justice, thereby legitimising some forms of inequality between states (Kymlicka, 1982). We therefore chose not to include cosmopolitan justice as a tenet of justice in our revisited framework but instead view it as a normative principle that prescribes what scale we ought to consider.

Alternatively, the scale of justice can be restricted to national, regional or local levels, justifying, for example, local rather than global decision-making or redistribution. This implies tolerating inequalities between different groups or peoples. Well-known examples of justifications for such scale restrictions are being in a relationship with each other, such as being citizens of the same state (Nagel, 2005); being engaged together in a cooperative practice (Rawls, 1999) as is the case in a democracy or in an energy cooperation; or national responsibility and self-determination (Kymlicka, 1982).

2.4.4. Knowledge

Actors can hold different beliefs about the world to be true and justified – for example, beliefs about certain risk assessments, beliefs that the government is corrupt or not or beliefs about the consequences of certain actions. Holding different epistemic assumptions can certainly lead to different conclusions about what is just. Thus, knowledge is a morally relevant aspect in the formation of claims of justice. However, it is not always easy to determine which beliefs ought to be considered justified and true. This is due to epistemic normative uncertainty, or the possibility of having

incomplete knowledge about fundamental phenomena or different interpretations of the same body of knowledge (Taebi et al., 2020).

Since the early 2000s, literature on epistemic injustice has emerged concerning justice related to the "sphere of epistemic activity" (James Kidd et al., 2017). Epistemic injustice "wrongs someone in their capacity as a subject of knowledge, and this in a capacity essential to human value" (Fricker, 2007). In other words, people are treated unfairly in communicative practices by being misrecognised in their capacity as knowers. Epistemic injustices include "exclusion and silencing; invisibility and inaudibility (or distorted presence or representation); having one's meanings or contributions systematically distorted, misheard, or misrepresented; having diminished status or standing in communicative practices; unfair differentials in authority and/or epistemic agency; being unfairly distrusted; receiving no or minimal uptake; being coopted or instrumentalized; being marginalized as a result of dysfunctional dynamics; etc." (James Kidd et al., 2017). Fricker discerns two kinds of epistemic injustice: testimonial injustice and hermeneutical injustice. The former occurs when the hearer deflates the speaker's credibility level based on prejudices. Hermeneutical injustice presents itself when a "gap in collective interpretive resources puts someone at an unfair disadvantage when it comes to making sense of their social experiences" (Fricker, 2007). This often results in the inability to realise that one is being treated in an unjust manner.

Though epistemic (in)justice has been discussed in the energy justice scholarship, the issue of how to deal with conflicting epistemic claims has been underexplored, except by San Martín and Wood (San Martín & Wood, 2022). This is unfortunate, as this strand of philosophy contains conceptual tools for understanding epistemic conflicts and whether and under which conditions these phenomena could be understood as injustices. Therefore, it is important to better acknowledge the normative uncertainties in epistemic assumptions.

2.4.5. Time

Lastly, when making claims of (in)justice, one always considers a certain time frame. Many energy justice frameworks include temporality as a principle or value (McCauley & Heffron, 2018). "*When* principles of justice take effect", such as in the past, the nearby future or the distant future, affects the conclusions drawn about justice (Miller, 2017). For example, intergenerational justice indicates that the time frame is extended to include at least some future generations (Malakar et al., 2019).

When time passes, many things might evolve. New knowledge can come to light, interpretations and prioritisations of principles, concepts and values might change, and moral intuitions about which subjects or scale to consider might be altered (van de Poel, 2018). Taebi et al. call these *evolutionary normative uncertainties*, which are defined as uncertainties regarding which moral norm will apply in the future, because both technology and our understanding of what is right in the society can evolve (Taebi et al., 2020). This is especially relevant in the energy context, as technology is under constant development and is involved in an ongoing process of mutual interaction with societal values. Perhaps in the distant future, another principle of justice will seem right, another group of subjects will become morally relevant, new knowledge will be found or the scale of justice will need to be altered.

2.5. Conclusions

Energy justice is often approached through the four tenets of procedural, distributive, restorative and recognition justice. While these tenets are important placeholders for addressing what type of justice issues are involved, they require further normative substantiations. These are captured through principles of justice that specify why – normatively speaking – something is just or unjust within each category or tenet of justice. In addressing the principles of justice, it is important to acknowledge normative uncertainties, or the fact that a principle could be considered in different ways that may be morally defensible but are not always compatible.

We conducted a conceptual review in order to map how the current scholarship deals with normativity. We selected 179 peer-reviewed articles in the English language, published from 2013 through May 2022. These contributions were analysed for the tenets being used and defined, the normative statements presented (or the normative policy recommendations), and whether and which justifications were given for the normative claims articulated. A possible limitation is the difficulty of determining whether a statement is normative or descriptive, as we acknowledge that there is always room for multiple interpretations.

We found that most contributions did not explicitly articulate the underlying reasons for a normative claim (or a normative recommendation). Those contributions that did provide a normative substantiation often considered one specific interpretation of a principle related to a tenet of justice, which left little room for the normative diversity of opinions, that is, the normative uncertainties.

In this chapter, we revisited the tenet-based framework of energy justice by specifically focusing on four aspects that help to articulate the normative uncertainties in the principles and thus in the tenets of energy justice. These aspects are (i) the scale of justice (i.e. whether justice is to be considered at a local, national, regional, multinational or global scale), (ii) the subject of justice (i.e. whether justice accrues to humans only or also to non-human animals, nature and other species), (iii) the body of knowledge that is assumed and (iv) the time frame in which justice issues are being considered. In doing so, we hope to provide a conceptual framework to help scholars make explicit the different types of normative assumptions underlying their claims of justice. An open dialogue and reflection process in the scholarship on this level can widen the scope of conceptions of justice that are considered and thereby improve the quality and legitimacy of the normative conclusions such as policy recommendations that follow. The revisited energy justice framework can also aid policymakers in making explicit normative assumptions in energy policies. As such, the framework can prevent misunderstandings and shed light on energy justice controversies.

The energy transition is prone to creating or exacerbating injustices, and it is vital to detect and mitigate these. Therefore, when discussing energy justice tenets, we encourage researchers to explicate the adopted conceptualisation of justice. This can be done by first defining the tenets in an unsubstantial way (so that there would be room for a plurality of normatively legitimate opinions) and then making explicit the adopted normative assumptions. Further research is also recommended to examine which conceptions of justice are appropriate in certain contexts. In other words, we advocate strengthening the link between philosophy and energy social science.

The revised energy justice framework invites critical reflection, as it is a tool to identify the normative assumptions made in research, energy controversies, energy policy, and in the design of energy systems and technologies. Lastly, the revised energy justice framework allows for describing energy controversies in more nuanced ways.

3. Understanding Energy Conflicts: From Epistemic Disputes to Competing Conceptions of Justice

Van Uffelen, N.[9]

3.1. Introduction

The energy transition implies changes in energy systems, infrastructure, and policies, and as such, it is prone to induce resistance and conflicts amongst the publics. To realise a successful and just energy transition, it is crucial to analyse the core of energy conflicts, including the grievances of social movements and citizens. In doing so, it is insufficient to understand energy conflicts as epistemic disagreements about risk analyses and safety (Hansson, 2018). When a conflict is framed as epistemic in nature, public resistance is explained by imagining the publics – based on "deficit assumptions" – as "unknowledgeable, incapable, unwilling and irresponsible agents in governance" (Rodhouse et al., 2021). Following this narrative, people hold false beliefs based on emotions that impede the best course of action, which can be determined by science (Groves, 2019). Energy projects and policies are more likely to succeed if the publics are well-informed about the truth.

Scholars have criticised such deficit models for explaining energy controversies, showing that people often voice moral concerns that go beyond epistemic debates (Cuppen et al., 2015; Pauli, 2019; Pesch et al., 2017). Such concerns mirror political and ethical values, mostly related to justice. Perceptions of (in)justice play a major role in the social (community) acceptance of energy technologies and infrastructures (Batel, 2020) and in explaining energy conflicts and controversies (Cuppen et al., 2019, 2020). More specifically, Pesch et al. describe how formal institutions and processes can give rise to moral claims of injustice in the informal sphere (Pesch et al., 2017). Given these insights, energy controversies cannot be reduced to clashing epistemic assumptions about truth, and it is vital to analyse energy conflicts in terms of justice.

When analysing energy conflicts, the energy justice tenet framework that distinguishes between distributive, procedural, and recognition justice is often used to better understand claims of injustice (Heffron & McCauley, 2017; McCauley et al., 2013; Schlosberg, 2007). In this, distributive justice refers to just distributions of burdens and benefits; procedural justice refers to just decision-making procedures; recognition refers to just relations of recognition through love, law, and status order; and restorative justice refers to the just restoration of past injustices. However, categorising claims into tenets does not shed light on disagreements within the tenets about what (procedural, distributive, restorative, or recognition) justice is (Bombaerts et al., 2023; Laes et al., 2023; van Uffelen et al., 2024; Wood & Roelich, 2020). Nor do such categorisations help understand how claims of injustice relate to the epistemic side of controversies. As such, the existing conceptual toolkit is insufficient to fully understand the core of energy justice conflicts.

This chapter proposes to analyse energy controversies not on the level of tenets, but on the level of competing conceptions of (distributive, procedural, recognition, and restorative) justice that might lie at the basis of the disagreement. Following Rawls, the concept of justice can have different conceptions: "The concept of justice I take to be defined, then, by the role of its principles in assigning rights and duties and in defining the appropriate division of social advantages. A conception of justice is an interpretation of this role" (Rawls, 1999). In other words, while there might be agreement on the importance of energy justice, it is disputed what a just distribution of burdens and benefits is, or what good procedures entail. Distinguishing between concepts and conceptions helps strengthen the energy justice scholarship's ability to analyse energy controversies, as there is often *normative uncertainty* (e.g. philosophical and social disagreement) about how to interpret justice (Taebi et al., 2020). So, the core of the controversy can best be described in terms of conflicting conceptions of justice.

This chapter aims to explore how competing conceptions of justice can constitute and possibly escalate an energy controversy. To identify the underlying justice conceptions of an energy controversy, this chapter studies the conflict about underground gas storage (UGS) Grijpskerk and Norg in the North of the Netherlands. Realising just energy transitions requires insight into technical and social challenges, including those of ethics and justice. Although understanding the source of societal unrest is essential for a just heat transition in the Netherlands, the social aspects of UGS Norg and Grijpskerk have not yet been studied. This chapter studies the conflict qualitatively and draws inspiration from literature on harm and compensation.

The difficulty here is that members of the publics often do not express well-structured positive conceptions of justice. Instead, they often voice negatively formulated injustices that are fragmented, uncoordinated, and unsystematic (Honneth, 1982). Warner described how counterpublics emerge as a response to injustices that "lack the power to transpose themselves to the generality of the state" (Warner, 2002). Similarly, Callon describes how institutionalisation can cause processes of overflowing, giving rise to critical discourses that are often conceptually inconsistent (Callon, 1998). As a result, there is a methodological challenge in understanding which conceptions of justice are being held by counterpublics. Yet, expressions of disapproval contain implicit moral standards that can be indirectly grasped through interpretation (Honneth, 1982; Roeser & Pesch, 2016). Evaluating something as unjust assumes an idea about what is just that acts as a yardstick. So, a more positive conception of justice can be derived from negatively formulated statements of injustice.

The results show that the conflict can be understood as two clashing conceptions of restorative justice regarding compensating for damage induced by an energy project. One set of stakeholders adheres to a Reactive Conception of restorative justice: a good compensation system organises that X compensates Y only if X caused harm to Y. This conception automatically centres science-based knowledge and epistemic processes due to the necessity to establish whether the actor caused the harm. Other stakeholders voice experiences of injustice that can be translated into an alternative conception of restorative justice, namely the Proactive Conception: a just compensation system consistently compensates individual households proactively for fears of harm, risks of harm, and actual harm, and compensates the region for gas-related distributive injustices. In this, causality and scientific knowledge are still important, but less so than for the Reactive Conception, because stability, equality, and well-being can override causality concerns in decisions on who receives compensation. The institutionalisation of the Reactive Conception explains why this controversy is primarily viewed as an epistemic dispute on a societal level. Moreover, it delegitimises the justice concerns of the other parties and deems them irrelevant, which might lead to the escalation of the conflict in the future.

The article proceeds as follows. First, the methodology for the Underground Gas Storage Grijpskerk and Norg case study will be explained (Section 3.2). Second, the case study will be introduced (Section 3.3). Then, the controversy will be analysed regarding competing conceptions of restorative justice (Section 3.4), followed by a discussion (Section 3.5). The chapter closes with some recommendations for policy

and further research on understanding energy justice conflicts in which normative uncertainties are key (Section 3.6).

3.2. Methods

This chapter studies the nature of the conflict about underground gas storage (UGS) Norg and Grijpskerk in the Netherlands. A total of 30 interviews were conducted with various stakeholders involved in the controversy between March and May 2022 (see Table 6). Ethics approval has been received for this study, and all participants have given written prior and informed consent. Most interviews took an hour and were conducted online, yet nearly all interviews with citizens were conducted face-to-face in either the UGS Grijpskerk or Norg region. The interviews were one-on-one, but four interviews were conducted with multiple stakeholders, and in two cases, two interviewers were leading the conversation.

To highlight both "sides" of the controversy, half of the participants were (activist) citizens from the UGS Norg and Grijpskerk regions. In contrast, the other half are stakeholders from different governmental levels or organisations related to mining and compensations in the Netherlands. Initially, a key participant (an activist citizen) was recommended by the researcher and proactively approached. Most other participants were sought via snowballing as the interviewees were asked to provide recommendations for other relevant stakeholders after each interview, and some participants were proactively contacted to maintain a balance between different organisations and geographical locations. A saturation point was reached when additional interviews brought little additional perspectives and when stakeholders started recommending other participants.

The interviews were semi-structured and focused on the interviewee's expertise, experience, or organisation; the recent developments at UGS Grijpskerk and/or Norg; and the compensation system. For each topic, an in-depth conversation followed about what people meant, why, and what other things were on their minds that they associated with the topic. Therefore, most of the time, the interviews covered topics that occupied interviewees. After each interview, the interviewees were asked to send the interviewer documents they deemed relevant. The documents that the interviewees sent (N = 96) were treated as supplementary to the interviews, and they included web pages, scientific reports, recommendations and advice, legal documents, newspaper articles, images and maps, manifestos, opinion articles, and policy documents.

The interviews were transcribed and analysed inductively using thematic analysis (Braun & Clarke, 2006). First, the topics on which participants had conflicting perceptions of opinions were coded (subthemes). Next, the subthemes were clustered into six themes, namely (1) (problems with) the compensation system; (2) changes in the contours around UGS Grijpskerk and Norg; (3) effects from mining activities; (4) participation in decision-making procedures; (5) attitudes towards (management and measurements of) gas infrastructures; and (6) perceptions about regional and national identities. A full list of themes and subthemes can be found in Appendix 3. Lastly, participants' distinct positions towards each subtheme were distinguished and coded, thus breaking down the subthemes into separate codes.

Uncovering the conceptions of justice underlying both sides of the debate, however, contains a methodological challenge because many interviewees mainly articulate experiences of injustice rather than well-formulated conceptions of justice. To tackle this challenge, special attention was paid to the implicit moral standards in expressions of disapproval. This is because evaluating something as unjust assumes an idea about what is just that acts as a yardstick. So, interpreting negatively formulated statements of injustice allows for formulating the conceptions of justice underlying both sides of the debate.

Table 6. Overview of interviewees.

Category	Location	Affiliation/organisation	Number of interviewees	Number of interviews
Citizens	UGS Norg	TWME (Tijdelijke werkgroep mijnbouwschade Een)	5	5
		Steenbergen Barst	1	1
		No organisation	1	1
	UGS Grijpskerk	SOGG (de Samenwerkende Omwonenden Gaslocatie Grijpskerk)	3	3
		No organisation	1	1
	Groningen Field	Ons laand ons lu	1	1
		GGB (Groninger Gasberaad)	1	1
		GBB (Groninger Bodem Beweging)	1	1
Government organisations	UGS Norg	Provincie Drenthe	1	1
		Municipality Noordenveld	3	3
	UGS Grijpskerk	Municipality Westerkwartier	1	1
		Province of Groningen	1	1
	Groningen Field	Commissie/Vangnet Bijzondere Situaties	2	1
	The Netherlands	Mijnraad	1	1
		SodM (Staatstoezicht op de Mijnen)	4	2
		EZK (Ministerie van Economische Zaken)	1	1
		EBN (Energiebeheer Nederland)	2	1
		IMG (Instituut Mijnbouwschade Groningen)	1	1
Research institutes	The Netherlands	TCBB (Technische Commissie Bodembeweging)	1	1
	Groningen Field	Kennisplatform Leefbaar en Kansrijk Groningen	2	1
Independent process advisor	UGS Norg + UGS Grijpskerk	Omgevingstafels	1	1
Total			**35**	**30**

3.3. The conflict above UGS Grijpskerk and Norg

3.3.1. Background

Natural gas will play an important role as a transition fuel towards decarbonisation: before it can be fully phased out, it will still be needed for energy security in many countries (Bugaje et al., 2022). This also goes for the Netherlands, a country in which natural gas has played a key role in the Dutch economy and culture. In 1961, a gas

field with an estimated 2.740 billion cubic meters of extractable low-caloric[10] natural gas was discovered in Slochteren, Groningen. Two years later, the NAM (Nederlandse Aardolie Maatschappij, owned by Shell and ExxonMobil) started extraction. As a result, the Netherlands became one of the largest producers of natural gas in Western Europe (Juez-Larré et al., 2016).

Since 1997, the NAM has also deployed two former gas fields for gas storage, namely UGS Norg in Drenthe and UGS Grijpskerk in Groningen. Both storage units lie approximately 3 km below the surface. UGS Norg is utilized for the seasonal storage of low-caloric natural gas from the Groningen field, to avoid high extraction peaks in the winter. The field has a maximum storage capacity of seven billion Nm^3 of natural gas. UGS Grijpskerk, on the other hand, has always been used for the storage of high-caloric[11] natural gas imported mainly from Norway, Russia, or Alger. The maximum storage capacity of UGS Grijpskerk is two billion Nm^3.

The extraction of the Groningen Field led to a series of induced seismic events. On January 1st 2021, a total of 1396 seismic events have been registered as caused by the Groningen gas field since 1986 (Muntendam-Bos et al., 2022). The amount of induced seismicity increased significantly between 2000 and 2013, culminating in the Huizinge earthquake on 16 August 2012 with a magnitude of $M_L = 3.6$ (Muntendam-Bos et al., 2022). These induced seismic events contributed to material and immaterial damage and increased public resistance (Juez-Larré et al., 2016). In January 2018, another seismic activity occurred ($M_L = 3.4$) led, besides an enormous increase of damage claims, to fierce policy responses: a month later, the SodM advised to reduce gas extraction by 50 %, and in April the EZK decided to end the extraction of the Groningen field altogether as soon as possible, preferably in 2022/2023 and in 2030 at the latest.

Given the expected closure of the Groningen Field, UGS Norg and UGS Grijpskerk become vital for Dutch energy security. To fulfil this role, three steps were outlined. First, the operating envelope of UGS Norg ought to increase from five billion Nm^3 to six billion Nm^3. Second, the low-caloric natural gas from the Groningen Field will be replaced by *pseudo-G-gas* (high-caloric natural gas with added nitrogen), which

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[10] Low-caloric gas is mainly used for consumption by households in the Netherlands and several other North-West European countries, as these appliances for heating and cooking have been calibrated for low-caloric natural gas since the 1960s.

[11] High-caloric natural gas is used for industrial consumption and electric power plants in the Netherlands and therefore the injection and extraction of natural gas occurs more consistently throughout the year.

will be made in a nitrogen factory that is being built in Zuidbroek.[12] Third, UGS Grijpskerk ought to be converted from storing high-caloric gas to low-caloric gas.[13] These three measures would imply that extraction from the Groningen field can be finally closed down between 2025 and 2028.

3.3.2. Compensations for damage

In the regions above UGS Grijpskerk and Norg, material damages caused by mining activities are mostly 'cosmetic'[14] fractures in buildings that do not yet pose safety hazards (as opposed to the damage above the Groningen Field). Most interviewees accept the storage units but under certain conditions. Interviewees mentioned that the storage units need to be safe and regulated responsibly and that there should be appropriate compensation for damage. As such, most societal unrest in the region pertains to the compensation system for damage due to mining activities.

Since 2019, the IMG (Instituut Mijnbouwschade Groningen) has been responsible for compensating for damage caused by UGS Norg and the Groningen Field. The IMG is an independent organisation in charge of compensating for material and immaterial damage (such as decreases in the value of buildings and lost enjoyment of living). The NAM and the Dutch state pay the compensations, given their respective percentages of ownership. The exact mission of the IMG is "to deal with mining damage in an independent, just, generous, and decisive manner" (Instituut Mijnbouwschade Groningen). After receiving a claim, the IMG enlists an engineering agency to investigate the damage and its potential causes; the agency advises the IMG on how much the compensation ought to be.

Before 2017, it was difficult for citizens to receive compensation because the burden of proof was upon the citizens who had to prove that mining activities caused damage. To address this issue, in January 2017 the *legal presumption of proof*[15] was

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[12] At the time of writing, the estimated start of production will be early 2023, see https://www. gasunietransportservices.nl/nieuws/stikstofinstallatie-zuidbroek-operationeel-begin-2023.

[13] In 2019, the NAM decided to close UGS Grijpskerk for gas storage in 2021 due to low profitability, but the developments at the Groningen Field impeded with the plans for closure.

[14] In some cases, the fractures have practical consequences, such as leaking or broken windows. Some interviewees claim that the damage above Norg and Grijpskerk is becoming more structural, leading to tilted walls or damaged foundations. For example, one interviewee discovered water in the basement and cracked foundations, causing the kitchen to tilt. Another interviewee inhabits a 100-year-old farm that has structural damage as it was built without proper foundations.

[15] Wettelijk bewijsvermoeden

instated, meaning that it will be assumed that the damage above the Groningen field is caused by mining unless proven otherwise. In January 2019, UGS Norg was added to the legal presumption of proof as UGS Norg was used to store gas from the Groningen field. A contour of 6 km around both UGS Norg and the Groningen Field was drawn to demarcate the area where the measure was applicable (see Figure 2). As a result, citizens within the UGS Norg contour could submit compensation claims for damage to the IMG, often leading to positive results. So, the criterion for the legal presumption of proof became: "The legal presumption of proof is applicable in cases of damage to buildings situated above the Groningen Field or gas storage Norg and until six kilometres outside it. It concerns damage caused by subsiding, rising, and (vibrations caused by) earthquakes" (Instituut Mijnbouwschade Groningen). At the time of the interviews, the IMG had no jurisdiction over UGS Grijpskerk, as the area falls outside the criterion for the legal presumption of proof, except when earthquakes from the Groningen field or UGS Norg reach the area.

Yet, in February 2021, a research report concluded that there is "no direct effect of subsiding and rising of the deep surface in UGS Norg on damage to buildings" (Geurts et al., 2021). The gas storage fields cover a large surface area, and the cyclical movement of 3 cm happens over 2 km in total; the whole surface goes up and down in the shape of a large dish, making damage within the area extremely unlikely. As a result, in May 2021, the IMG decided to redraw the contours around UGS Norg in which the legal presumption of proof is applicable. Consequently, most areas around UGS Norg that previously enjoyed this legal protection have now lost it. The IMG started to decline compensation claims in those areas.

To confirm the areas where the UGS Norg might indirectly cause damage, the IMG issued another research report to Deltares that focused on ground and surface water (Kooi et al., 2021). This report concluded that indirect effects might occur via underground water dynamics in two distinct zones, leading to another redrawing of the contours around UGS Norg to include these areas (see Figure 3). These two moments of redrawing caused major societal unrest around UGS Norg.
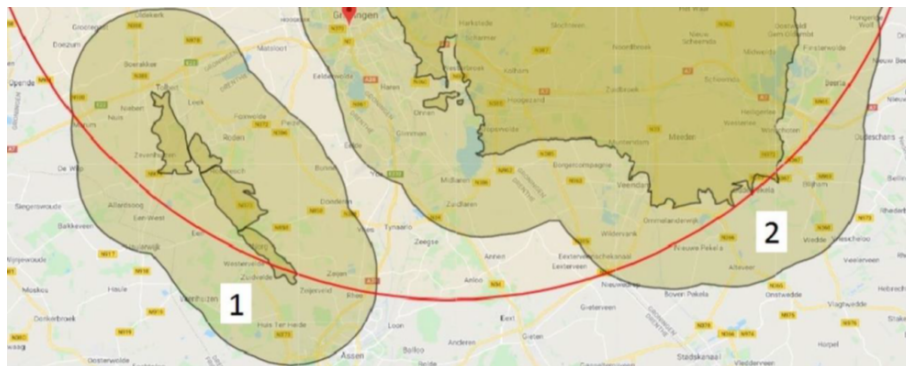
Figure 2. Effect areas around UGS Norg (1) and the Groningen Field (2), source: TNO-report 2021 R10325, original source: https://www.schadedoormijnbouw.nl/nieuws/advies-klaar-over-indirecte-effecten-diepe-bodemdaling.

Figure 3. Overview of the areas where according to the analysis indirect effects of deep surface movement cannot be ruled out. Source: Deltares report 11207096-002-BGS-0001, original source: https://www.schadedoormijnbouw.nl/nieuws/advies-klaar-over-.

3.4. Mapping the justice conflict

3.4.1. More than an epistemic dispute

> What bothers people is not that they have damage: the problem is that they face a huge administrative and legal wall. It's a very long trajectory, especially when it is combined with the feeling – and I am afraid that that feeling is justified in many cases – that they are not being taken seriously, or that there are people on the other side that try their best to keep the compensation as low as possible or to dismiss it altogether in other ways. That feeling causes great misery, depression, or a significant decrease in quality of life. I think that is the main problem in areas affected by earthquakes. (Groningen Province)

The epistemic conflict around UGS Grijpskerk and Norg revolves around whether damage to buildings can be caused by cyclical surface movements induced by the filling and emptying of the gas storage fields, without the occurrence of earthquakes. On the one hand, the views of the SodM, scientists, the IMG, and the provinces of Groningen and Drenthe align with the scientific reports. As such, they argue that cyclical movements cannot lead to damage to buildings, except in distinct areas outlined in the Deltares report. As a result, the IMG can only compensate for damage by earthquakes induced by UGS Norg and the Groningen field, and for damage within designated areas around UGS Norg where gas storage might indirectly lead to fractures. All other damage claims are explained through other factors: interviewees mention water dynamics, settlement damage, thrust forces, temperature changes, droughts, passing trucks, plants, and trees close to the walls, taking long showers, and ill-constructed outbuildings.

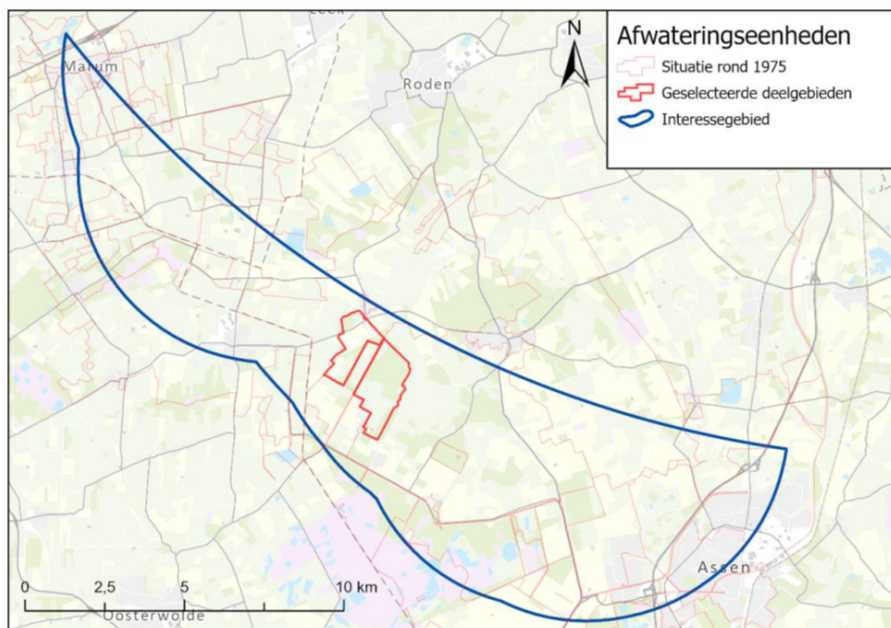On the other hand, citizens and interviewees from the municipalities Noordenveld and Westerkwartier claim that UGS Norg and Grijpskerk can result in physical damage. Several reasons were given to argue for this position: (1) damage to buildings also appears in moments unrelated to earthquakes; (2) the subsurface movements are not insignificant but quite disruptive to buildings; (3) the subsurface is complex, and there are many unknown unknowns, for example, it might be possible that a building is damaged because it is located at an intersection multiple gas fields, and therefore, more research has to be done; and (4) the conclusions drawn in the reports by TNO / TU Delft and Deltares are invalid or false because (a) the study is too theoretical: fieldwork and an actual study of the subsurface are lacking; (b) the assumptions of the model are limited, outdated, problematic, or too deterministic, because they are based on data from smaller gas fields and standard soil parameters, while the subsurface around UGS Norg is much more complex and in a way unique as it interacts with

other fields; (c) the initial research question given by the IMG to only consider direct effects were too narrow, and therefore the conclusions drawn from the studies are not justified; and (d) the researchers were not independent and biased.

To sum up, the epistemic dispute concerns the causation between gas storage and damage to buildings. If cyclical surface movements can cause damage to buildings, then the IMG's redrawing of the areas in which the legal presumption of proof is applicable was not justified. If there is no such causal link, then the redrawing based on the reports was justified and the IMG was right not to hand out compensations in those areas. The media coverage and parliamentary debates on UGS Grijpskerk and Norg focus primarily on this epistemic dispute.

Although the epistemic dispute seems prominent at a societal level, many stakeholders – especially citizens and municipalities – expressed distributive, restorative, procedural, and recognition injustices that cannot be reduced to purely epistemic concerns. This chapter argues that the core of the controversy can best be described in terms of conflicting conceptions of justice. *Restorative justice* refers to the just restoration of injustices. Depending on the injustice, a just restoration might entail the acknowledgement of wrongdoing, forgiveness, apologies, compensation, recognition, a more thorough redistribution of burdens and benefits, or (monetary or in-kind) compensation (Hannis & Rawles, 2013). It is widely acknowledged that the tenets of justice are analytical tools that are interconnected in empirical realities (Wood, 2023; Wood & Roelich, 2020). In the case of UGS Grijpskerk and Norg, restorative justice is realised institutionally through a compensation system, and thus it is intrinsically connected to procedural justice (e.g., how decisions about the compensation system are made), distributive justice (e.g., the distributions that result from the compensation measures), and recognition justice (e.g., the values and norms that are institutionalised in the compensation system). In this chapter, the controversy is interpreted as a conflict about restorative justice instead of procedural justice, mainly because it is not contested how decisions are being made, but rather how compensation should be organised, which includes dispute about when and for what harms compensation should be handed out. This is a conceptual, analytical choice made to fit best the empirical reality. In the case of UGS Grijpskerk and Norg, different stakeholders have different ideas about how and when compensation should be organised, which falls under the category of a just restoration dispute (David Boonin, 1970; Simkulet, 2015). From the data, two conceptions of restorative justice can be deducted.

The first set of stakeholders (that include institutions such as the IMG, Mijnraad, SodM, EBN, and the TCBB) adhere to a *Reactive Conception of restorative justice*, meaning that compensation is due after the harm was caused. In other words, a good compensation system organises that X compensates Y only if X caused harm to Y. This matches the mission statement of the IMG, which is the "independent, generous, and just execution of compensating damage caused by surface movements that result from mining activities at the Groningen field or UGS Norg" (Instituut Mijnbouwschade Groningen). Causality is central to this conception because X should compensate Y only if X caused the damage. As a result, the reactive conception automatically centres scientific knowledge and epistemic processes that establish the cause of the harm.

Other stakeholders (mainly the citizens above UGS Grijpskerk and Norg and the related municipalities and provinces) voice claims of injustice, revealing that they oppose the Reactive Conception of restorative justice. To further define which conception of restorative justice is being held by these stakeholders, the most prominent claims of injustice are analysed through the following three topics of controversy: whether it was justified to reduce the areas in which the *legal presumption of proof* goes; (4.2); whether the current design of the compensation system is just (4.3); and what harms or injustices ought to be restored (4.4). From this, a positive formulation of restorative justice can be deduced (4.5).

3.4.2. Should the contours around UGS Norg be changed (back)?

The first topic of conflict pertains to whether the contours around UGS Norg (that delineate the area in which the legal presumption of proof is applicable) should have been changed and whether this ought to be reversed. Before the IMG decided to redraw the contours, the whole area of 6km around UGS Norg fell under the legal presumption of proof. The IMG decided to reduce this area significantly after the publication of several scientific reports that debunk a causal relation between UGS Norg and damage to buildings.

On the one hand, the Reactive Conception of restorative justice justifies redrawing the contours around UGS Norg. According to this conception, the IMG has no mandate to compensate if there is no causation. So, if scientific reports state that UGS Norg without seismic activity – in other words, by merely subsiding and rising – cannot cause damage, then no compensation is due and the contours in which the legal presumption of proof is applicable ought to change. Following the Reactive Conception, the contours ought to change as scientific knowledge on causation

progresses. The interviewee from the IMG stated: "*You have new knowledge, and it shows something different. In that case, the law says, you must correct this, so you cannot allocate compensations here.*" As such, the IMG decided to change its contours along with the insights from scientific reports.

On the other hand, many regional stakeholders, including municipality Noordenveld, lobby for the restoration of the old contours of 6 km around the gas field, based on two claims of injustice. First, many interviewees classify the changing contours as unjust because "*the rules of the game have been changed during the game*", a metaphor that was used nine times by different interviewees.[16] The legal presumption of proof was perceived by citizens as a promise, leading to certain expectations about where the burden of proof lies. After the publication of the scientific reports, certain areas lost this legal protection, which was perceived as a broken promise: "*Promises were made in 2018 and they were simply reversed in 2021. […] Yes, that does not feel fair.*" Based on this frustration, stakeholders demand the return of the legal presumption of proof in the original area.

Second, changing the contours resulted in equal cases receiving unequal compensation. For example, a member of municipality Noordenveld testifies: "*People are living in the same street, practically neighbours, where one gets thousands of euros in compensation and someone who happens to file a claim recently [e.g., after the contours have changed] gets nothing. But has the same damage to his house.*" These inequalities are exacerbated because receiving at least 4.000 euros of compensation comes with a voucher that can be spent on solar panels. This leads to a very visible marker in a street: everyone knows who received compensation – the households with solar panels – and who did not. Most citizens describe that such inequalities can harm social cohesion in the neighbourhood because of frustrations, jealousy, and secrecy. To sum up, the changing contours are perceived as arbitrary, which can be considered the opposite of justice: "It [justice] requires that where two cases are relevantly alike, they should be treated in the same way" (Miller, 2017).

To summarise, municipalities and citizens perceive the redrawing of the contours as unjust, for two reasons. One, promises ought not to be broken. Two, changing the contours led to unequal treatment of equal cases, giving rise to arbitrary inequalities between households unrelated to the actual damage. As such, these stakeholders propose to restore the original contours even though a causal relationship between the gas storage and damage to buildings might be lacking, because of two reasons about

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[16] This implies that there is a group of stakeholders that are actively lobbying for changing back the contours, and that this is an argument that clearly resonates amongst citizens.

fairness. In other words, concerns of equality and well-being trump concerns of causality when delineating the area in which the legal presumption of proof is applicable. These stakeholders opt for a stable compensation system that does not regularly change its rules when scientific knowledge progresses so that all equal cases are treated in the same way.

3.4.3.   Is the compensation system just?

The second point in this controversy revolves around the question of whether the compensation system is just or not. On the one hand, the Reactive Conception justifies the current compensation system. Following this conception, it is vital to know whether a fracture was caused by UGS Norg or the Groningen Field or not. Determining the cause of a specific fracture requires insights from (engineering) experts. As such, the method of determining whether a specific fracture was caused by UGS Norg or not is often quite complex, and lengthy, and sometimes leads to court cases. Showing whether a certain fracture is caused by mining or not is also very costly: it requires hiring engineers who draft reports to study the damage case-by-case. In 2021, paying 1 euro compensation for physical damage required 0,74 cents in execution costs (Instituut Mijnbouwschade Groningen, 2022). Following the Reactive Conception, these costs are justified because compensation is appropriate only if there is causation.

On the other hand, citizens and municipalities consider the compensation system as unjust based on two reasons that relate to justice. First, according to some citizens the current compensation system "*hurts more than the actual fractures*" because it can cause sleepless nights, tension, stress, and an overall decrease in quality of life.[17] These negative effects are the consequence of intrinsic features of the system, such as its length and complexity, but also its design. The compensation system is designed to investigate whether the fractures are caused by UGS Norg or Grijpskerk or not, and thus a lot of money is spent to prove that the citizens submitting the claims are wrong. An active citizen states: "*It is completely unacceptable that a government victimises citizens and then that same government hires lawyers against all these victims to prove them wrong.*" As a result, citizens feel abandoned by the government. So, the compensation system has negative consequences by design. These consequences are considered unfair because the reason

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[17]   Many participants testify that they do not fix the cracks, paint their walls and window frames or redo their garden because they are waiting to receive compensation or because they believe that it has no use as new cracks will soon appear anyway.

why citizens have to go through that process is inflicted upon them: they did not ask for the gas storage. So, the complex compensation system causes additional immaterial harm that was wrongfully incurred upon citizens, on top of the gas storage and the fractures.

Second, it is claimed that the current compensation system is not inclusive enough. Interviewees claim that the system is insufficiently accessible to the most vulnerable as the anticipation of stress and hassle causes some (especially elderly) people to refrain from reporting damage. Moreover, if people disagree with the IMG's assessment they can go to court, yet such measures are prone to exclude groups that do not enjoy a certain amount of education, money, and psychological resilience. Some citizens even suspect that elderly people are more prone to having their compensation claims denied as they are less likely to object in court. So, the current system is perceived as unjust because not everyone who deserves compensation gets it.

Based on these two claims of injustice, interviewees dismiss the epistemic nature of the compensation system as unjust altogether, and thereby also the Reactive Conception. Two types of suggestions were mentioned by the interviewees. One, the money would be better spent by just paying the compensations in case of doubt, not only because citizens claim that scientific models often fall short when proving with 100 % certainty that the storage caused damage to a particular house (as the epistemic discussion highlights), but mostly because it would avoid the unfair amounts of stress that the compensation system now brings. Two, it was often suggested that the compensation system should be thoroughly revisited with Norway as a best practice, as "*they just created a pot of money*", and that "*the citizens immediately get compensation*". This latter suggestion hints towards an imperative to not only compensate for damage that already occurred but also potential damage. As such, there is also a disagreement about what ought to be compensated.

3.4.4. What should be compensated?

The third main point of controversy pertains to what injustices ought to be compensated. On the one side of this disagreement, compensation is required for (material and immaterial) damage caused by mining activities, in other words, compensation should be reactive. Other than that, the current distribution of burdens and benefits is considered more or less just. The assumption here is that the North is not entitled to profits from mining any more than the other provinces in the Netherlands. Stakeholders refer to the many benefits that the North has already received from natural gas that the regions should be grateful for. Examples that were

mentioned are theatres, pools, and cafes that were once sponsored by the NAM; the fact that the NAM provided employment opportunities in the region; and the pride and feelings of ownership that the Dutch once had (and still should have, according to some interviewees) to provide gas to half of Europe. These things are referred to by stakeholders as gifts, not as things the region had a right to. As such, the only thing that the Netherlands is due to the North is the compensation for the damage that was caused *ex-post* by the mining activities, and this compensation is to individual households, not to the region as such.

Yet at the other end of the controversy, claims of injustice indicate that three forms of harm are not being compensated. First, harm can also be caused by mining activities *ex-ante*, disregarding the occurrence of fractures and earthquakes. This includes *fear of harm*, well-grounded or not, as fear, stress, and unhappiness can have a "detrimental impact on people's lives and well-being" (Hannis & Rawles, 2013). The visible fractures in buildings, the machines and accompanying pipelines that regulate the gas storage, and the small possibility of earthquakes have been described by participants as causes of anxiety. Moreover, it can be argued that being exposed to a *risk of harm* is in itself a form of harm (Hansson, 2003; Hayenhjelm & Wolff, 2012; Nickel, 2020). Hansson argues that "everyone has a prima facie moral right not to be exposed to risk", and this right can only be overridden if the risk is "part of an equitable system for risk-taking" that implies for example being compensated for taking the risk (Hansson, 2003). Both taking a risk and the fears that may result from it are considered by citizens and municipalities as forms of harm that are currently not being compensated.

Second, citizens experience misrecognition through law as they feel that their well-being and safety – or broader, their human dignity – do not weigh against the monetary and economic interests of the North. A citizen claims: "*We say it all the time, it [Groningen] is a big hole, bulldozers in front of it, everything that is Groningen, cover it in the sand. Make it a theme park with nuclear power plants. They put the well-being of Groningers aside.*" Misrecognition through law can be considered as hurt or harm (Uffelen, 2022), yet this remains unacknowledged and uncompensated.

Third, participants claim that the mining activities have a negative impact not only on individual households but also on the region and that this is an injustice that remains uncompensated. In this view, the current distribution of gas-related burdens and benefits between the North of the Netherlands (in this case, Groningen and Drenthe) and the Dutch government (or: the rest of the country) is considered to be unfair. The natural resources in the Netherlands are divided unequally over the

country: most gas fields, salt caverns, and potential for wind and solar farms are in the north. As such, the North – and especially the province of Groningen – is often referred to as a colony ("*wingewest*") within the Netherlands. This has an impact on the future of the region, as many inhabitants move away, which leads in turn to fewer investments in the region. In other words, there are also two competing conceptions of distributive justice at play; one that assumes a Dutch-individualistic scale of justice, and one that adopts a regional-communal scale. Under the latter conception, there is an additional injustice that ought to be restored by redistributing gas-related burdens and benefits within the Netherlands.

When taking into account *ex-ante* damage, misrecognition through law, and a regional scale of justice, it follows that reactive compensation of damage to individual households does not go far enough. The interviewee from the EZK made a similar statement: *"(…) we see how the burdens come down. The whole operation is profitable. Perhaps there should be some general compensation from the state. (…) So, it's mainly, the way it is done right now where there is incidental compensation, I don't think that is enough."* Such a view would imply that compensation is also due to risks and uncertainties *ex-ante*, and experienced misrecognition through law. Moreover, adopting a regional scale of justice leads to demands for a more thorough redistribution of the benefits from mining from the Netherlands to the region. A possible way to meet both demands would be nonmonetary compensations that benefit the region, such as counselling, improving infrastructure, investing in education, or developing high-status jobs (Hannis & Rawles, 2013).

3.4.5.   The proactive conception of restorative justice

As described, a first set of stakeholders adheres to a Reactive Conception of restorative justice, while citizens and municipalities negate this conception through several claims of injustice. These claims of injustice have been described in the previous sections and they can be summarised as such:

- Changing the contours according to new scientific knowledge is unjust, because (1) promises ought not to be broken, and (2) equal cases ought to be treated equally.
- The current compensation system is unjust, because (3) it causes unfair amounts of stress, and (4) it excludes the most vulnerable.

- Only compensating damage *ex-post* is unjust, because (5) it fails to restore other injustices that occur, such as fear of harm, risks, and misrecognition through law.

- Only compensating individual households is unjust, because (6) there is a maldistribution of gas-related burdens and benefits within the Netherlands.[18]

From these claims of injustice, a positively formulated conception of restorative justice can be deduced, namely a *Proactive Conception of Restorative Justice*. This conception perceives a compensation system as just under the following conditions:

- The compensation system ought to be stable (e.g., 1).
- The compensation system ought to treat equal cases equally (e.g., 2 and 4).
- The compensation system ought to contribute to the well-being of the affected individuals (e.g., 3).
- The compensation system ought to also compensate for *ex-ante* harms such as fear, risks, and misrecognition through law (e.g., 5).
- There needs to be a redistribution of gas-related benefits from the Netherlands to the regions that bear the burdens (e.g., 6).

According to the Proactive Conception, a just compensation system consistently compensates individual households for fear of harm, risks of harm, and actual harms, and compensates the region for gas-related distributive injustices. In this, causality and scientific knowledge are still important, but less so than for the Reactive Conception, because stability, equality, and well-being can override concerns of causality in decisions on who receives compensation. The Proactive Conception, therefore, prescribes a compensation system that is less strict in terms of causality. For example, even though reports show that UGS Norg and Grijpskerk cannot cause damage to buildings, fractures should still be compensated in these areas for the sake of fairness.

3.5. The dominance of the reactive conception

In this controversy, two groups of stakeholders have different ideas about when compensation is due, what a just compensation system looks like, and what ought to be restored. These two positions can be traced back to two competing conceptions of restorative justice, namely the Reactive and the Proactive Conception. Yet, these

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[18] This analysis shows intense connections between 'restorative justice' and other tenets of justice. Here, experiences of misrecognition in the compensation system, ill-distributed effects of the compensation measures, and unjust compensation procedures co-constitute the perception of the compensation system as unjust.

conceptions do not have equal standing in the debate. The Reactive Conception shines through the formulation of the task given to the IMG: the organisation is only allowed to compensate *ex-post* harm when causation cannot be disproven. Because of this institutionalisation of the Reactive Conception, it has a higher standing than the other. This dominance has two main implications.

First, the Reactive Conception reduces the local debate on restorative justice to an epistemic dispute about causation. The conception implies that compensation is appropriate only in case of causality. As such, scientific reports and engineers define who should receive compensation and who should not. Given the institutionalisation of the Reactive Conception, there appears to be one single way to argue why more compensation is due: one must contest scientific insights and claim that the cyclical movements of UGS Norg and Grijpskerk do cause damage.

Second, the dominance of the Reactive Conception and its ensuing epistemic focus cannot deal with the claims of (in this case, distributive and recognition) injustice that are implied by other conceptions of restorative justice, such as the Proactive Conception. Instead, it renders ensuing claims of injustice irrelevant or illegitimate. For example, when citizens feel unsafe, they are considered irrational, because they allegedly ignore scientific facts without adequate scientific justification and based on emotions only. Moreover, when citizens express feelings of arbitrariness because two alike houses are not treated alike and subsequently claim compensation as well, they are blamed to be opportunistic as they misuse situations for their monetary interests. Lastly, citizens who claim a more thorough distribution of burdens and benefits for their region are blamed to be spoiled or whiners who complain about every little thing. For instance, an interviewee stated: "*(…) the surroundings of the gas storage have become a park. (…) And people were worried, because if it were to close, who is going to pay that? Who is going to maintain the bicycle paths? Who will take care of the park? That was their main question, the thing that bothered people because there was no solution.*" In sum, institutionalising one conception of justice renders other conceptions illegitimate, and their ensuing claims of injustice as irrelevant.

The data shows that citizens experience such prejudices. Some inhabitants feel perceived as profiteers ("*It's not because we want the money that they can just do anything. It's a huge insult to the Groningers*"). Moreover, many citizens and municipalities feel they are often not taken seriously when voicing claims of injustice. A citizen describes being perceived as "*a couple of stupid farmers*", and others expressed that they felt perceived as incompetent, irrelevant, and not taken seriously. For example, an interviewee stated: "*We had an information day, and one of the NAM said, well little madam* [mevrouwtje]*, you have to see it as a corn starch porridge that comes and goes. That's how they look at us. (…) Those people*

don't know anything so we can just tell them anything." Furthermore, testimonials of citizens are discredited as unjustified by the media, by experts, and by the rest of the Netherlands. One interviewee described being laughed at. These phenomena can be described as misrecognition through status order, or more specifically as testimonial epistemic injustice (Fricker, 2007; James Kidd et al., 2017; Uffelen, 2022). So, failing to acknowledge the existence of legitimate alternative conceptions of justice quickly leads to misrecognition through status order, including testimonial epistemic injustice.

Previous studies have described how dismissing and labelling a vocal minority (Wolf, 2021), depoliticisation (Wolf & Van Dooren, 2018), and avoiding meaningful engagement with protesters (Wolf, 2018) can contribute to the escalation of policy conflicts. In this controversy, the institutionalisation of the Reactive Conception leads to dismissing many claims of injustice as irrelevant, irrational, or illegitimate (Cuppen et al., 2015). Stakeholders voicing these claims subsequently experience misrecognition through status order, including epistemic testimonial injustice. As such, it could be expected that the institutionalisation of the Reactive Conception of restorative justice might contribute to further escalation of the controversy.

3.6. Concluding remarks

Justice is an incredibly intricate concept that can refer to many different conceptions. There is normative uncertainty on energy justice, making it difficult to make energy policies, technologies, and systems more just. Conversely, energy justice controversies are often reduced to epistemic disputes in which laypeople dispute expert scientific knowledge. This also goes for the conflict around UGS Grijpskerk and Norg. Although the conflict publicly plays out as an epistemic disagreement, this qualitative case study shows that many claims of injustice are voiced that transcend the epistemic domain.

Public responses to energy systems, projects, and policies are often negatively formulated, unsystematic, fragmented, and uncoordinated claims of injustice (Honneth, 1982). The tenet-based energy justice framework categorises claims of injustice into tenets (e.g., procedural, distributive, restorative, and recognition justice). Yet, such categorisations are insufficient to fully understand the controversy and energy controversies in general. Instead, this article recommends investigating an alternative avenue to understand energy justice conflicts, namely through analysing conceptions of justice. This study shows that it is possible to articulate claims of energy injustice in a more positive formulation. The UGS Grijpskerk-Norg controversy can be traced back to two clashing conceptions of restorative justice. The Reactive

Conception is institutionalised through the mission of the IMG and thereby largely determines the public debate as an epistemic controversy about causality. Consequently, expressions of injustice that stem from the Proactive Conception, such as claims for redistribution or redesigning the compensation system, are dismissed as irrelevant. This leads to experiences of misrecognition through status order and possibly to the escalation of the conflict in the future.

To avoid injustices remaining hidden and to prevent escalation, it is vital to take claims of injustice seriously. This has several implications. First, it means acknowledging normative uncertainty, in other words, that claims of injustice might stem from alternative, non-institutionalised interpretations of justice that might nevertheless be justified. Second, justice conflicts should not be reduced to epistemic disputes, as this would almost inevitably delegitimise claims of injustice. Third, when a certain conception of justice is institutionalised, the broader discussion about what a just energy system is can get lost. So, in this case study, taking claims of injustice seriously implies opening up the discussion about how the compensation system ought to be designed, whether the contours should be changed back, and what harm is eligible for compensation. The interviewee from the EZK stated: "*My dream is (…) that I get to reject something once. (…) For the credibility of governance. (...) Yes, if it complies with all the legal demands then they [energy companies] get permission. (…) I just have a legal framework that says that, if it can be done safely and responsibly, then it is permissible.*" Although institutions and regulations may seem objective or universal, they are socially constructed and consist of institutionalised conceptions of justice that are, in fact, particular and can be questioned (Young, 1990). Lastly, taking claims of injustice seriously implies flexible institutions that continuously adapt in the face of valid emerging moral concerns. Institutionalising conceptions of justice will continuously lead to novel claims of injustice, which may hold essential clues for making our energy systems more just.

In sum, understanding claims of injustice requires uncovering the underlying conceptions of justice and their related status in society. Which conceptions circulate, which are dominant or institutionalised, and which expressions of injustice are thereby excluded, rendered illegitimate, or even hidden? Such a research agenda adds to the conceptual apparatus of the energy justice scholarship, which enhances its ability to effectively analyse justice in energy controversies.

Supplementary data to this article can be found online at https://doi.org/10.1016/j.erss.2024.103809.

4. Revisiting Recognition in Energy Justice

Van Uffelen, N.[19]

4.1. Introduction

Concerns for the ethical aspects of energy systems originated in the environmental justice and climate justice literature, however the first articulation of energy justice in the academic literature dates from 2013 (McCauley et al., 2013). The energy justice scholarship, which has grown rapidly in the last decade, strives towards understanding what is (un)just in energy systems, driven by a commitment to making energy systems more just (K. E. H. Jenkins, Sovacool, et al., 2020b). To do so, the most frequently used energy justice framework is the tenet-based one that includes distributive, procedural and recognition justice (McCauley et al., 2013). Distinguishing between different tenets of justice has descriptive and normative goals. On the one hand, the framework functions as a toolkit to analyse case studies in terms of justice; on the other hand, it structures the evaluation of certain policies and decisions, and aids the process of making policy recommendations.

Recognition justice has a distinct status compared to the other two tenets since its meaning seems the least tangible to grasp. As a result, recognition justice has been operationalised and measured in various ways. However, this diversity leaves a normative and an explanatory potential untapped. A better understanding of what it entails to be (mis)recognised can provide a more fine-grained explanation of energy controversies. Also, better understanding what (mis)recognition signifies can aid the process of making energy systems and policies more just.

The notion of justice as recognition has a much broader history than currently seems to be taken into consideration in the energy justice literature. Elaborate reflections on the concept can be traced back to Critical Theory, in the works of philosophers such as Nancy Fraser and Axel Honneth. Drawing from Fraser's and Honneth's theories of justice, this chapter aims to revisit the concept of recognition justice in energy justice by asking the following question: what does the tenet of

recognition justice refer to, taking into account the philosophical literature on the concept?

To do so, a systematic study of the definitions and use of "recognition justice" circulating in energy justice literature was conducted (Section 4.2). To solve the ensuing issues, the theories of Nancy Fraser and Axel Honneth have been studied in-depth, including their roots in German idealism. From this, four key findings from this history of thought are presented (Section 4.3). These learnings result in a revisited conception of recognition justice in energy justice (Section 4.4).

4.2. The use of recognition justice in energy justice

This section aims to understand how recognition justice is currently defined and interpreted in the energy justice literature. To do this, a systematic literature study was conducted. In the databases Science Direct, Web of Science, and Scopus, all articles and reviews that mention "energy justice" in the title, abstract or key words and that also contain the word "recognition" in the article were selected. Further criteria were the English language; publication dates after 2012; and only full-length peer-reviewed articles and reviews were included. The resulting 285 articles were subsequently filtered; articles that only mention "recognition" in the bibliography or in a footnote, and papers that do not define nor engage with the concept as a tenet were excluded. The final 196 papers (figure 4) were analysed in atlas.ti by searching for "recogn", since this includes all relevant verbs and nouns such as "recognition", "recognised", and "recognitional". The results were labelled according to two categories, namely (1) definitions and (2) the interpretations, understandings, or operationalisations of the concept when applied to the specific data or case study. In the remainder of this section, the definitions and interpretations of the concept that were found are explained and critically assessed.
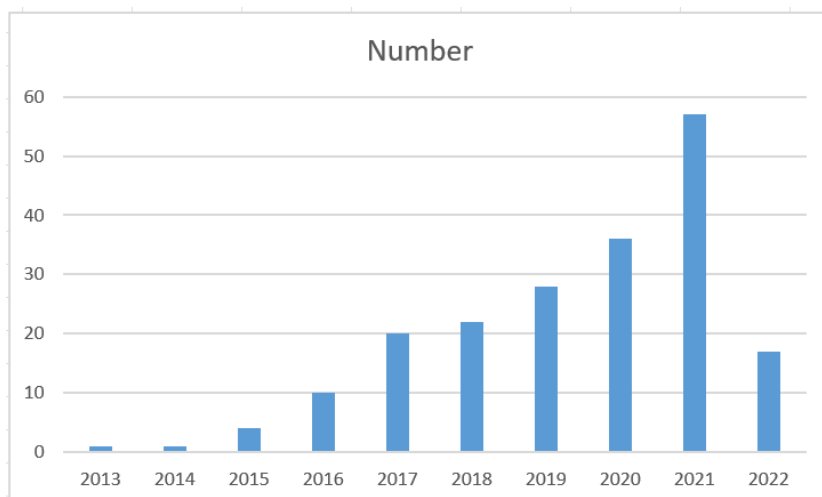
Figure 4 . The final number of contributions, categorised per year.

As figure 4 shows, the amount of articles that engage with the concept of recognition in energy justice has increased during the last decade. In the data, ten different *definitions* of recognition justice were detected (e.g. table 7). These definitions are subsequently clustered by their respective starting points, namely (1) actors[20]; (2) laws and regulations; (3) decision-making procedures, and (4) culture. From the 196 articles, 27 (13,8%) did not define recognition justice. A total of 40 articles (20,4%) defined the concept without further engagement in the article. This could perhaps be explained by the conceptual differences and unclarities present in the scholarship due to the large variety in definitions. Articles that define recognition justice mention on average two different definitions.

The first cluster of definitions starts from identifying certain social groups. While a first definition argues that recognition justice pertains to "who" is recognised, affected, impacted, or responsible, a second prescribes attention directly towards (impacts on) vulnerable groups. However, both definitions do not signify what it actually means to recognise a certain group; defining recognition justice as *recognising certain groups* is rather circular. Also, the who-question is equally relevant for distributive and procedural justice tenets; "who is impacted or affected" can signify distributive or procedural injustices too. For example, from the 39 articles that adopt the vulnerability-definition, 14 actually interpret the data in terms of distributive justice

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[20] I use "actors" instead of "people" throughout the whole article to open up the theoretical possibility of recognising non-humans such as animals or natural systems.

(35,9%), and 13 articles interpret recognition as inclusion (33,3%). Furthermore, the vulnerability-definition seems to imply that one can only recognise vulnerable groups, thereby inherently excluding all others. Lastly, an emphasis on the most vulnerable overlaps with fundamental intuitions of justice in general (Rawls, 1999).[21] These actor-definitions do not clearly distinguish recognition justice from other tenets, obscuring its value in the energy justice framework. This is especially problematic given that 78 papers (39.8%) define recognition justice in these terms.

The second cluster describes recognition justice in terms of recognising the rights and equality of actors through assigning legal rights in laws and regulations. In most cases, this is applied to humans; however, in some cases the concept is also applied to rights of non-human actors such as animals or (specific parts of) the environment. It seems valid that the equality, dignity, and intrinsic value of actors can be (mis)recognised through laws and regulations. However, there might be other ways in which actors can be (mis)recognised, such as in the cultural sphere. Therefore, it can be considered as a part of a definition; as the only definition, it is too narrow.

The third cluster takes decision-making procedures as its starting point. The cluster combines definitions of recognition justice as concerned with fair representation, freedom from physical threats, and complete and equal political rights; including or representing all relevant voices in decision-making; recognising people's needs, differences and interests (in policy-making); recognising experiences or perspectives (in policy-making); or recognising bodies of knowledge (in policy-making). These definitions all seem to take a procedural-institutional approach. As a result, there is a substantial overlap with procedural justice, which represents a concern for fair decision-making procedures, which automatically includes representation and inclusion of all relevant voices, equal political rights and the like. This observation is relevant, since a vast majority of authors defines recognition justice in terms of procedural justice (N = 120; 61.2%). Moreover, a total of 75 (38,3%) interprets recognition justice as inclusion and representation in decision-making procedures, making it the most-used interpretation of recognition justice in the scholarship. It is intuitive that actors can be misrecognised in formal procedures, but reducing recognition to inclusion or representation narrows the definition of recognition justice to procedural justice completely, making it redundant as a separate tenet within the energy justice framework.

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[21] John Rawls indicated that utilitarianism, sacrificing a minority for the majority, conflicts with our basic intuitions of what justice is. In this sense, justice always holds a special concern for minorities, which can be interpreted as a concern for the most vulnerable.

Lastly, many articles cite Nancy Fraser's conception of recognition justice (Danermark & Gellerstedt, 2004; Fraser, 2000; Fraser & Honneth, 2003). According to these authors, recognition justice refers to the cultural status order of society. Misrecognition occurs when such patterns are institutionalised in a way that prohibits the participatory parity of certain groups. However, only 25 of the 64 papers that mention this definition actually interpret or apply the concept in these terms; a majority takes decision-making procedures as a starting point (N = 37). A possible cause is confusion around the notion of "participatory parity", a concept which is explained more in-depth in Section 4.3, which seems to be interpreted often in terms of participation in decision-making procedures.

Table 7. The definitions of recognition justice in the energy justice scholarship and their descriptions, including the number of articles that mention this definition, clustered by their starting points.

Starting point	Nr.	Definitions	Recognition justice is concerned with…
Actors (N = 78)	1	Who (N = 54)	"who" is recognised, affected, or impacted
	2	Vulnerable groups (N = 39)	(the impact on) vulnerable groups
Laws and regulations (N = 39)	3	Legal rights, dignity, equality, and laws (N = 39)	recognising the rights, intrinsic dignity, and equality of actors (humans and/or non-humans) through laws and regulations
Decision-making procedures (N = 120)	4	Representation, freedom from threats, and political rights (N = 12)	fair representation, freedom from physical threats, and complete and equal political rights
	5	Inclusion in procedures and processes (N = 72) of	including or representing all relevant voices in decision-making
	6	Needs/differences/interests (N = 46)	recognising people's needs, differences, and interests
	7	Experiences/perspectives (N = 21)	recognising people's experiences, and perspectives, perceptions, viewpoints, world-views, paradigms, visions, conceptions, understandings, and feelings
	8	Knowledge (N = 21)	recognising (and adequately valuing) different bodies of knowledge and understandings

| Culture (N = 71) | 9 | Status order, including epistemic dimensions (N = 64) | how the status order, e.g. patterns of cultural value, is institutionalised, giving rise to processes of marginalisation, ignoring, disrespect, degradation, devaluation, … of groups of people |
| | 10 | Cultural identity (N = 12) | recognising cultural and collective identities |

Besides the ten different definitions of recognition justice, thirteen different *interpretations* of recognition justice were coded. This indicates how the concept of recognition justice was interpreted in relation to the empirical data in the articles. Four interpretations were coded that were not explicitly present in any of the given definitions, namely (a) agency, indicating that recognition justice ought to recognise the agency of actors, including respect for their autonomy, sovereignty and self-determination (N = 11); (b) love, stating that recognition justice is about care, concern, and emotive connections with other human beings (N = 2); (c) distributive justice, interpreting that recognition justice is about fair distributions of burdens and benefits, which reduces recognition justice to the distributive justice tenet (N = 42); and (d) recognition justice is about recognising a certain issue, topic, or problem, by either indicating that it exists and/or that it should gain more attention - which mirrors a more colloquial use of "recognition", dissociated from justice (N = 25). The full list of interpretations and their descriptions and frequencies are described in Table 8. On average, scholars adopt five different interpretations of the concept.

Table 8. The interpretations of recognition justice in the energy justice scholarship and their descriptions, including the number of articles that adopt the interpretations, clustered by their starting points.

Starting point	Nr.	Interpretations	Recognition justice is concerned with…
Actors (N = 40)	1	Who (N = 18)	"who" is recognised, affected, or impacted
	2	Vulnerable groups (N = 30)	(the impact on) vulnerable groups
Laws and regulations (N = 51)	3	Legal rights, dignity, equality, and laws (N = 51)	recognising the rights, intrinsic dignity, and equality of actors (humans and/or non-humans) through laws and regulations

Decision-making procedures (N = 116)		Representation, freedom from threats, and political rights (N = 0)	fair representation, freedom from physical threats, and complete and equal political rights
	4	Inclusion in procedures and processes (N = 75) of	including or representing all relevant voices in decision-making
	5	Needs/differences/interests (N = 53)	recognising people's needs, differences, and interests
	6	Experiences/perspectives (N = 27)	recognising people's experiences, and perspectives, perceptions, viewpoints, world-views, paradigms, visions, conceptions, understandings, and feelings
	7	Knowledge (N = 43)	recognising (and adequately valuing) different bodies of knowledge and understandings
Culture (N = 53)	8	Status order, including epistemic dimensions (N = 49)	how the status order, e.g. patterns of cultural value, is institutionalised, giving rise to processes of marginalisation, ignoring, disrespect, degradation, devaluation, … of groups of people
	9	Cultural identity (N = 14)	recognising cultural and collective identities
New categories (N = 71)	10	Agency (N = 11);	recognising the agency of actors, including respect for their autonomy, sovereignty and self-determination
	11	Love (N = 2)	care, concern, and emotive connections with other human beings
	12	Distributive justice (N = 42)	fair distributions of burdens and benefits
	13	Issue (N = 25)	recognising a certain issue, topic, or problem, by either indicating that it exists and/or that it should gain more attention

From this literature study it can be concluded that there is a great diversity in definitions and understandings of recognition justice. The concept currently refers to a large variety of phenomena in the scholarship. And although concepts such as rights, identity, values, experiences, needs and differences seem somehow related, a systematic understanding of the nature of these relations is lacking. The diversity in definitions and understandings obscures what "recognition justice" actually measures,

leading to incoherencies and confusion in the scholarship. To better understand what the tenet refers to, the key texts that represent the roots of the concept were studied in-depth.

4.3. From Critical Theory to energy justice: four take-away points

The concept of justice as recognition has a rich history that far precedes the energy justice scholarship, starting with Fichte's explorations in the 18th century until more contemporary efforts in Critical Theory by Nancy Fraser and Axel Honneth (Iser, 2019). Without pretending to do full justice to the work of the philosophers in this study, I will present four key take-away points from an in-depth literature study on Honneth's and Fraser's theories of recognition, since their perspectives currently represent the two main approaches to the concept (Judith Butler, Axel Honneth, Amy Allen, Robin Celikates, Jean-Philippe Deranty, Heikki Ikaheimo, Kristina Lepold, Lois McNay, David Owen, 2021). These insights result in a proposal for a revisited conception of recognition justice in energy justice.

4.3.1. Two approaches to recognition justice

A first observation that was drawn from the literature study is that there are two different approaches to recognition justice. Each approach has its own definition,

Table 9. An overview of the main differences between the two approaches to recognition justice.

	Why misrecognition is unjust	Recognition justice =	Object of investigation	Method of investigation
Self-realisation model	Harms practical relation-to-self	Undistorted relation-to-self	Harm to relation-to-self	Identify subjective experiences of misrecognition
Status order model	Interferes with parity of participation in social life	The cultural status order allows all to interact as full peers in social life	The effect of institutionalised patterns of cultural value on the social status of actors	Deliberate whether the institutionalised patterns of cultural value prevent participatory parity

normative ground, and method of investigation. A schematic overview of the two approaches can be found in Table 9. The first approach (chronologically), Honneth's recognition as self-realisation, will be described in Section 4.3.2. The second approach, which defines recognition justice in terms of the cultural status order, is described in the remainder of this section.

Nancy Fraser places recognition justice in the cultural realm. She calls her stance the "status model of recognition": she understands recognition as concerned with the cultural *status order*, or *patterns of cultural value*. Cultural values are always hierarchical: something is always more valuable than another thing. For example, executives are often valued more than homeless people (Awad et al., 2018).

Such value systems are institutionalised or deeply embedded in institutions.[22] Institutions ought to be interpreted in the broadest sense here; Fraser mentions marketised and non-marketised institutions such as "legal, political, cultural, educational, associational, religious, familial, aesthetic, administrative, professional, intellectual" institutions (Fraser & Honneth, 2003, p. 58). Conversely, value patterns can be embedded in both formal and informal institutions, the latter being "associational patterns, long-standing customs or sedimented social practices of civil society" (Fraser, 2000, p. 114).

Recognition injustices therefore "targets injustices it understands as cultural, which it presumes to be rooted in social patterns of representation, interpretation, and communication. Examples include cultural domination (being subjected to patterns of interpretation and communication that are associated with another culture and are alien and/or hostile to one's own); nonrecognition (being rendered invisible via the authoritative representational, communicative, and interpretative practices of one's own culture); and disrespect (being routinely maligned or disparaged in stereotypic public cultural representations and/or in everyday life interactions)" (Fraser & Honneth, 2003, p. 15). In other words, according to Fraser, institutionalised cultural value systems can cause instances of misrecognition.

When it comes to her normative stance, Fraser claims that misrecognition is wrong because it prevents people from participating equally "as peers in social life" (Fraser,

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[22] Institutions ought to be interpreted in the broadest sense here; Fraser mentions marketised and non-marketised institutions such as "legal, political, cultural, educational, associational, religious, familial, aesthetic, administrative, professional, intellectual" institutions (Fraser & Honneth, 2003, p. 58). In other words, value patterns can be embedded in both formal and informal institutions; informally, Fraser talks about "associational patterns, long-standing customs or sedimented social practices of civil society" (Fraser, 2000, p. 114).

2000). This is what she calls "*participatory parity*" (Fraser & Honneth, 2003, p. 36). If an institutionalised status order prevents people from participating as a peer or "full partner in social life", then that status order is unjust and ought to be de-institutionalised (Fraser & Honneth, 2003, p. 30). Note that it is not only about participation in decision-making on a political level, but about participation in all forms of social life, including raising your hand in class and sitting in a bus. The notion of participatory parity should therefore not be confused with procedural justice: it is much broader. Fraser's notion of participatory parity certainly includes political participation, but it goes way beyond that: it penetrates all interactions in social life.

4.3.2. (Mis)recognition in different ways

Fraser's definition is often adopted in the energy justice scholarship (N = 64), although only 25 of these articles actually interpret or apply the concept in these terms. Honneth's self-realisation approach to recognition justice, on the other hand, is not yet considered in energy justice: only one contribution that cites Honneth's conception of recognition justice was found through the literature study (Boamah & Rothfuß, 2020). This implies that Honneth's theory of recognition, including the early thoughts about recognition in philosophy, has been forgotten in the energy justice scholarship. This is unfortunate, since Honneth's categorisation has the potential to structure the diversity in definitions that has appeared in the energy justice scholarship over the years.

The second key learning stems from Fichte's, Hegel's, and Honneth's writings: actors can be (mis)recognised in different ways. Before explaining this, it is important to note the distinction between elementary recognition and recognition in a certain respect (Iser, 2019). Elementary recognition indicates the mutual recognition of persons that simultaneously constructs a person's identity. This is the type of recognition that the philosopher Johann Gottlieb Fichte (1762–1814) envisioned. Fichte stipulated that humans are fundamentally socially constituted. The "I" must recognise the other as a free individual and the other must do the same (Breazeale, 2018). This mutual recognition is necessary for the existence of human I-hood, freedom, and self-consciousness.

In the energy context, it does not seem very useful to speak of this elementary recognition. Recognition in a certain respect comes closer to the colloquial use of the term (Iser, 2019). Normally, somebody is recognised as something and with regard to a certain feature. To give an example: it has little meaning to say that a certain group is not recognised in a participatory context; rather, it is more useful to state that some

people are misrecognised as epistemic agents that contribute valuable knowledge in the debate, to give an example.[23]

Georg Wilhelm Friedrich Hegel (1770-1831) developed this train of thought further. Hegel distinguished three spheres in society, namely the family, the state, and civil society. Within each sphere, there exists another relation of recognition, namely love, law, and community of value respectively. Inspired by Fichte, Hegel stated that all three recognition-relations are needed for an individual to prosper. Wrong relations of recognition, such as slavery, are harmful to our identity: relations of mutual recognition in all three spheres in society are necessary for the self-consciousness and autonomy of individuals.

These three spheres of recognition have been further conceptualised and linked to justice by the contemporary philosopher Axel Honneth. Honneth describes in detail the three ways in which people want, need, and expect to be recognised, namely through love, law, and cultural appreciation (Honneth, 1995). He connects these societal relations to specific practical relations-to-self.[24] In recognition through love, we learn self-confidence; through laws, we find self-respect; through cultural appreciation, we find self-esteem. A healthy identity is established through good relations of recognition. And if we are not recognised properly in one way or another, we develop different psychological injuries or distorted relations-to-self. Thus, Honneth's normative stance is as follows: misrecognition is wrong, not because it interferes with participatory parity, but because a distorted relation-to-self is wrong; each human is worthy of having an unharmed self-identity.

First, there is recognition through love. Love refers to relationships "constituted by strong emotional attachments among a small number of people" (Honneth, 1995, p. 95). It involves emotional ties, affection, and care. When you are recognised through love, you acquire the capacity to be alone and independent, precisely because you can rely on others. In other words, in recognition through love we acquire self-confidence or self-trust. But if we are misrecognised through love, we lack self-confidence. Honneth regards love as the most fundamental form of recognition: it is the prerequisite for all other kinds. It is hardly possible to develop self-respect or self-

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[23] Note that "recognition" is not the same as "identification": while identification is value neutral ("I identify you as a black person"), recognition always implies to a certain extent a positive evaluation of the feature one is recognised as. In that sense, 'acknowledgement' comes closer, but it still seems "less ambitious" than "recognition". Recognising *someone* as *something* implies both an acknowledgement and a positive attitude towards it.

[24] Fraser does not want to phrase recognition in psychological terms: she does not agree with Honneth here.

esteem in case of a truly distorted relation-to-self caused by a lack of love. This makes the normative imperative that accompanies recognition through love extremely strong. And since relations of love are highly dependent on societal structures and institutions, energy policies or systems that prevent people from developing loving relationships can be considered unjust (Powers & Faden, 2019, p. 37). Think for example of high energy prices that prevent households from creating a comfortable and stress-free home.

The second form is recognition through law. The law is based on the equality principle: it is general and impersonal and it describes the duties and obligations that we all have towards one another (Fraser & Honneth, 2003, p. 143). Therefore, through legal relations we are recognized according to our general features, namely as humans. Through the law, actors can recognise each other's dignity, freedom, equality, autonomy and so on, for example through assigning legal rights and duties. If such laws are in place, we learn to see ourselves as autonomous, free, moral agents. This way, we gain self-respect (Moyaert, 2010). Being misrecognised through laws leads to a diminished self-respect; people experience that their autonomy or moral agency is not being taken seriously. They might feel that they are "less human" than others, or less deserving of certain rights. An example is a law that does not protect lithium miners from unsafe working circumstances (B. K. Sovacool et al., 2020). This law can make people feel unworthy of protection, or undeserving of the same amount of respect than the company owner would receive. Another example is a decision-making process that does not involve citizens (Cuppen et al., 2020). People might feel that their capacity for autonomous moral decision-making is being disregarded. Paternalistic policy-making processes of this kind can stir feelings of powerlessness in people and consequently also frustrate policy-makers.

The third is recognition through cultural appreciation (Fraser & Honneth, 2003).[25] We want to be recognised for our specific contributions to society, our accomplishments, our achievements – that which distinguishes us from others (Honneth, 1995). We are always part of an intersubjectively constituted value community that assigns a hierarchy of social worth to forms of life. This translates for example in the higher valuation of certain jobs or accomplishments, in terms of wages or honour. When you are recognized through cultural appreciation, you acquire self-esteem: you experience that your achievements or abilities are recognized as valuable

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[25] In *The Struggle for Recognition*, Honneth calls this "recognition through solidarity"; on the recognition-page in the *Stanford Encyclopedia of Philosophy* it is described as "recognition through esteem". However, I judge recognition through cultural appreciation the most clear and unambiguous.

by other members of society (Honneth, 1995). Misrecognition through cultural appreciation leads to low self-esteem. People might feel that their contributions to society are worth less, that their knowledge or opinions are less valuable, or that they themselves are no asset to society. Think for example about the potential impact of coal mining phase-out on the self-esteem of workers (Oei et al., 2020).

The fact that actors can be (mis)recognised in different ways shapes the second valuable take-away point from Critical Theory to energy justice. If actors can be recognised in different ways, then recognition injustices can also happen on multiple accounts. To give an example: to say that "X is misrecognised in the policy process" can mean many things. It can mean that X is not recognised through the law as a stakeholder worth participating; this would indicate a harm in self-respect. However, it can also mean that X's input was not sufficiently taken into account. In this case, X's contribution to the epistemic community is not valued as much as X feels it should have, which is misrecognition through cultural appreciation. Applying these nuances in energy justice might prove useful in explaining in what way people feel misrecognised exactly. According to Honneth, different types of misrecognition pertain to different aspects of one's identity, and this could be relevant in the diagnosing phase of injustices. Once it is clear which recognition injustice occurs, a more precise problem analysis can be made.

Honneth's categorisation of recognition through law, cultural appreciation, and love, can structure the diversity found in the definitions and understandings of recognition justice from the literature study. When taking into account Fraser's notion of status order, one change could be made to this categorisation: people can be (mis)recognised through law, love, and status order. Here, "cultural appreciation" is redefined in Fraser's terms as "status order". The reason for this choice is that Fraser's notion of "cultural status order" is much more encompassing than how Honneth describes "cultural appreciation". Honneth focuses on the valuation of people's contributions to society, and his examples mostly focus on labour. Fraser's examples also include, for example, the Black Lives Matter movement.

Adopting this tripartite categorisation of love, law, and status order, unifies and structures the different meaningful dimensions of the concept that are now scattered throughout the energy justice scholarship in one single conception of recognition justice.

4.3.3. Two methods to detect misrecognition

Third, both the self-realisation model and the status order model propose different methods for detecting instances of misrecognition. This section provides a brief discussion of both methods and their (dis)advantages, which adds methodological rigour to detecting misrecognition in the energy justice scholarship.

First, Honneth claims that recognition injustices can be detected through the (large-scale) articulations of experiences of injustice. Honneth claims that misrecognition is immediately felt by subjects as a psychological injury, harm, or injustice. In his later writings, Honneth mentions a "moral sensorium"; people have some kind of internal automatic registration system of injustices (Honneth, 1995, p. 153). Misrecognition leads to psychological injury, and this harm is immediately experienced by our normative sensorium. Honneth observes for example that resistance and protest are not motivated by abstract ideals of justice, but by the experience of violence to "intuitively presupposed conceptions of justice" (Honneth, 1995, p. xiv). It is people's experiences of injustice that spark societal struggle. Studying these experiences lead to discovering recognition injustices.

However, people's experiences of misrecognition are neither sufficient nor necessary as a method to detect instances of misrecognition. For one thing, experiences of injustice are not sufficient for identifying misrecognition. If we base the legitimation of claims of injustice solely on experiences of misrecognition, even the neo-Nazi's might have a ground to stand on. And that goes against our intuitions of what justice essentially entails.[26] For another, experiences of injustice are also not necessary for legitimate claims of injustice since one can realise that an injustice is happening without experiencing harm to one's own identity. Think for example of high-income households standing up for the interests of the energy poor. Moreover, injustices can occur without an emotional response by the victim. This is because our moral sensorium is not always reliable, a fact that Honneth acknowledges as well. An example is a household in energy poverty. The members of this household may have become socially isolated hardly have visitors or visit others themselves, which might lead to the lack of realisation that their house is heated way below average (Bartiaux et al., 2018, 2021; Bouzarovski et al., 2021). The family members may have become used to the inconvenience and do not realise their situation is actually unjust. Socialisation and internalisation have shaped their expectations so that they do not

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[26] Honneth recognises this issue; in the seventh chapter of *The Struggle for Recognition* he claims that mass action is a better indication of injustice, since it would indicate that many people experience misrecognition. However, this does not fully solve the problem at hand.

experience an injustice.[27] In other words, there can be injustice without experience of injustice. The human moral sensorium can be crucially flawed through socialisation in an unjust system and is therefore not to be blindly trusted.

Since experiences of injustice are neither sufficient nor necessary for detecting misrecognition, Fraser proposes an alternative method to detect recognition injustices. Different people interpret the effects of institutionalised values on participatory parity in different ways. No single authority, such as a philosopher, should decide whether misrecognition occurs - and the misrecognised subjects themselves alone are no sufficient standard either, given the arguments above. Therefore, she argues, "the norm of participatory parity must be applied dialogically and discursively, through democratic processes of public debates" (Fraser & Honneth, 2003, p. 43). To detect recognition injustices, Fraser proposes the method of organising a (public) deliberation on whether institutionalised patterns of cultural value interfere with a group's participatory parity.

However, there is a problem with this procedural method to detect misrecognition as well. Fraser formulates this herself: "There is an unavoidable circularity in this account: claims for recognition can only be justified under conditions of participatory parity, which conditions include reciprocal recognition." (Fraser & Honneth, 2003, p. 44) In other words, the participatory setting might be prone to certain value systems that hinder participatory parity in the dialogue itself. Fraser justifies her approach by pointing out that deliberation is by nature reflexive: there must be room to think critically about the cultural assumptions of the participants.

To sum up, Honneth suggests that misrecognition can be detected by investigating (collective) experiences of misrecognition, in cooperation with academics studying the formation of groups in protests, resistance, and controversies. In contrast, Fraser argues for a democratic deliberation about whether an institutionalised value system constitutes impedes with participatory parity in social life.

As a last remark, Honneth's and Fraser's methods of detecting misrecognition are not incompatible. Instead, they can be seen as complementary. To give an example: to detect whether misrecognition occurs, people's experiences of injustice could be investigated, followed by a reflection on the experienced injustices with the relevant

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[27] Hegel gives the example of an 18th century lord who regularly beats his maid. According to the norms of that time, the lord was considered – also by the maid – to be decent and masculine. The maid's self-understanding is so distorted that she deems herself to be unworthy of more respect. Examples like this in the energy context are still scarce. Honneth's concept of "hidden morality" might be a valuable concept for investigating injustices that remain hidden.

stakeholders. Combining both methods shapes a stronger methodological framework to detect instances of misrecognition.

4.3.4.   Recognition justice in relation to other tenets of justice

The fourth key learning pertains to the relation between the different tenets: recognition justice cannot be reduced to another tenet of justice. The literature study shows that the most frequent definition of recognition justice pertains to fair decision-making procedures, focusing mainly on inclusion and fair representation, and 75 articles understand and interpret the concept in terms of procedural justice. Moreover, 42 articles describe their recognition-related findings in the language of distributive justice. However, for both Honneth and Fraser, recognition entails more than fair procedures or a fair distribution of benefits and burdens. Both authors convey that (mis)recognition can occur in more situations than in decision-making processes or in the distribution of benefits and burdens.

However, Honneth and Fraser do disagree about the relations between the tenets of justice. Honneth claims that all injustices – including procedural and distributive ones – can be traced back to misrecognition (the so-called "normative monism" stance) (Fraser & Honneth, 2003). Fraser on the other hand denies that distributive injustices are a mere derivative of recognition injustices. She proposes a "two-dimensional" or a "perspectival dualist" conception of justice (Fraser & Honneth, 2003, p. 3). She argues that recognition justice and distributive justice are two separate dimensions, analytical perspectives or tenets of justice, if you will.

The multiple tenet tradition within energy justice leans towards Fraser's standpoint. Therefore, her arguments for distinguishing different tenets of justice are worthy of discussing briefly. The main argument for her perspective dualism is that recognition injustices and distributive injustices have different causes. On the one hand, recognition injustices have roots in the cultural status order; the source is cultural and fixing it requires "cultural or symbolic change" (Fraser & Honneth, 2003). Distributive injustices on the other hand are "rooted in the economic structure of society. Examples include exploitation (having the fruits of one's labor appropriated for the benefit of others); economic marginalization (being confined to undesirable or poorly-paid work or being denied access to income-generating labor altogether), and deprivation (being denied an adequate material standard of living)" (Fraser & Honneth, 2003, p. 13). Fixing distributive injustices requires "economic restructuring of some sort", or redistribution (Fraser & Honneth, 2003, p . 13). Since recognition and distributive injustices have different roots, they are to be considered as inciting

different families of claims of injustice. According to Fraser, in reality most injustices are caused by a mix of both in a certain proportion that "must be determined empirically in every case" (Fraser & Honneth, 2003, p. 13). So, every instance of injustice can be scrutinized in terms of recognition too, since misrecognition always plays a more or less significant role.

Interestingly, Fraser speculates that "the political", which she defines as concerned with "decision-making procedures", might be a third dimension of justice (Fraser & Honneth, 2003, p. 68). According to Fraser, a key issue of the political is "problem of the frame": who should participate in decision-making, who are the relevant social actors? (This is, ironically, exactly how recognition justice in energy justice is often understood, as represented by the actors-cluster of definitions.)

To sum up, both Fraser and Honneth convey the message that recognition justice is not just a derivative of another tenet of justice, such as procedural or distributive justice. As a result, a more clear definition of recognition justice, making crisp its uniqueness in relation to the other tenets, would be a merit to the energy justice scholarship.

4.4. Conclusion: revisiting recognition justice

In this chapter, I have argued that the current understanding of recognition justice in energy justice is not satisfactory. A total of ten different definitions and thirteen understandings circulate, obscuring what the concept aims to measure. To understand what the tenet of recognition justice refers to, the roots of the concept have been studied in-depth through the works of Axel Honneth and Nancy Fraser. From this, four main insights were retrieved that enrich the understanding of recognition justice in energy justice:

1. There are two approaches to recognition justice, namely the self-realisation model and the status order model;
2. Actors can be (mis)recognised in multiple ways, namely through laws, the cultural status order, and through love;
3. Two different yet complementary methods to identifying instances of misrecognition can be distinguished, namely investigating experiences of injustice articulated through protests and resistance, and deliberating the effect of the status order on participatory parity;
4. Recognition justice cannot be reduced to other tenets of justice, such as procedural or distributive justice.

These insights result in a proposal for a revisited understanding of recognition justice in energy justice: I propose that recognition justice is concerned with the adequate recognition of all actors through love, law, and status order. Recognition through love depends to a large extent on social arrangements, such as energy infrastructure and affordable prices. Through laws, actors can recognise each other's dignity, intrinsic value, and equal moral standing, for example through assigning rights and duties to communities, animals, or nature. And lastly, through the status order actors can recognise the value of certain cultural identities and their (epistemic) contributions to society, for example by taking seriously rather than dismissing the needs, perspectives, concerns and knowledge of indigenous communities, or by supporting workers who are victims of regional coal phase-outs. The advantage of distinguishing between different spheres of recognition is that it has more descriptive and explanatory potential when applying the concept to empirical data. The proposed definition takes into account that (mis)recognition can occur in different ways, which can bring much needed nuance in energy justice analyses.

Integrating Fraser's and Honneth's perspectives as such is rather unorthodox, since Fraser's and Honneth's theoretical-normative positions are very opposed to each other. Honneth defines adequate recognition as an undistorted relation-to-self, while Fraser defines it in terms of participatory parity. However, the proposed definition still leaves room for the different normative starting points. Researchers can evaluate relations of recognition through love, law, and status order with either principle as yardstick.

The proposed definition of recognition justice as a concern for the adequate recognition of all actors through love, law, and status order, structures the large variety of definitions and interpretations of the concept that currently circulate in the energy justice scholarship. Future research may be needed to apply these concepts more in-depth to energy contexts; to further explore the possibilities of recognising non-human actors; and to experiment with and test the validity of the different methods for detecting misrecognition. Yet, the proposed categorisation can provide a more fine-grained explanation of energy controversies, and such analyses can subsequently aid the process of making normative evaluations to make energy systems and policies more just, which is the ultimate aim.

5. The Dangers of Recognition for Environmental Justice

Van Uffelen, N.[28]

5.1. Introduction

Environmental justice scholarship studies – amongst others – the claims of injustice of environmental justice movements (Bulkeley et al., 2014; Fuller & Bulkeley, 2013; Holifield et al., 2009; Schlosberg, 2004). Since the second wave of environmental justice, scholars have often adopted three categories of justice to understand grievances and environmental injustices: distributive, procedural, and recognition justice (Schlosberg, 2004, 2007; Walker & Day, 2012). In this, recognition has become a central tenet for its explanatory and normative potential, as recent political movements can no longer be understood as mere struggles for redistribution; on the contrary, they can best be conceived as struggles for recognition (Fraser, 1997; Honneth, 1995; Taylor, 1996). Moreover, the vocabulary of misrecognition provides a strong normative basis to justify grievances and demand social change.

Environmental justice scholars generally share the assumption that recognition is just and, with that, misrecognition should be battled. However, some environmental justice scholars, like Kyle Whyte, stated that recognition is often a "smokescreen that obscures the continuance of oppression against non-dominant groups such as Indigenous peoples" (Whyte, 2017, p. 120). Moreover, Coolsaet & Néron (2020) argued that recognition can reproduce injustices "through the desires of those who are victims of misrecognition". In a similar vein, Álvarez & Coolsaet (2020) argued that "parity of participation may contribute to the reproduction of environmental injustices", and "patterns of oppression will be continuously reproduced through the desires of those who are oppressed". In sum, recognition can reproduce colonial structures, and as such, it can be dangerous.

While environmental justice literature describes one danger of recognition, critical theorists have articulated multiple dangers intrinsic to recognition that remain unthematized in environmental justice (Stahl et al., 2021). As such, I will explore the extent to which the dangers of recognition in the context of environmental justice

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manifest themselves in multiple ways and beyond (neo)colonial contexts due to intrinsic features of recognition. In this, I will draw on Critical Theory literature and provide examples for each danger to (a) explore whether the dangers of recognition apply beyond the context of decoloniality, in other words, in different global contexts, and (b) illustrate their relevance for environmental justice specifically. In the examples, people's struggles for recognition can be considered reasonably legitimate, yet recognition would still (re)produce environmental injustice, thus demonstrating the ambivalence of recognition. With that, the chapter figures as a starting point for further exploring the dangers of recognition for environmental justice.

The chapter proceeds as follows. Section 5.2 discusses the notion of recognition as portrayed by critical theorists, including its prevailing positive and negative views. Sections 5.3-5.6 present four dangers of recognition for environmental justice in relation to empirical examples involving energy infrastructures and environmental justice movements. Section 5.7 concludes that acknowledging the ambivalence of recognition necessitates distinguishing between (1) the legitimacy of claims of misrecognition and (2) the legitimacy of values, norms, identities, and outcomes that are (re)produced through seeking and granting recognition.

5.2. Recognition in political philosophy

5.2.1. Recognition in environmental justice: embracing relationality

The popularity of recognition in environmental justice can be traced back to David Schlosberg (Schlosberg, 2004, 2007). By referring to Iris Marion Young, Nancy Fraser and Axel Honneth, Schlosberg critiqued the dominant paradigm in political philosophy that reduces justice to distributive justice. The *distributive paradigm* is advocated by John Rawls, Brian Barry, and many other political philosophers, and it "defines social justice as the morally proper distribution of social benefits and burdens among society's members" (Young, 1990, p. 16). The paradigm views people as autonomous entities that exist "prior to social relations and institutions", and from this original position, one can reasonably determine what distributive justice is (Young, 1990, p. 27).

The distributive paradigm is insufficient because it "implicitly assumes a social atomism, inasmuch as there is no internal relation among persons in society relevant to considerations of justice" (Young, 1990, p. 18). As such, it obscures that people are constituted in relations with others, their social groups, and their cultural

environments. The paradigm focuses on how things should be distributed and thereby fails to investigate the "social, cultural, symbolic, and institutional conditions underlying poor distributions" (Schlosberg, 2004). In this respect, Nancy Fraser argues that misrecognition is a different – cultural – form of injustice, next to maldistribution, requiring a different remedy (Fraser & Honneth, 2003).

The recognition lens on justice thus assumes that people's self-conceptions, identities, and autonomy are relationally and intersubjectively constituted. People recognise each other through political, economic, sociotechnical, and informal institutions; in other words, relations of (mis)recognition can be institutionalised, and thus, they are subject to justice evaluations. Given the critiques on the distributive paradigm and the sound assumption that people are relational beings instead of atomistic individuals engaging in political negotiation, recognition is frequently defended in environmental justice scholarship as an indispensable paradigm or tenet of justice (Bauer, 2006; Figueroa, 2006; Holifield, 2012; Martin et al., 2016; Schlosberg, 2004, 2007; Whyte, 2011, 2017).

5.2.2.   Honneth's and Fraser's recognition

In environmental justice scholarship, authors generally refer to Fraser's ideas on recognition and, to a lesser extent, to Honneth's theory of recognition. In this section, I briefly highlight Fraser's and Honneth's conceptions of recognition (for a more thorough discussion, see Coolsaet & Néron, 2020). In the next section, these theories are contrasted with the view that recognition is an ambivalent phenomenon.

In the spirit of the Frankfurt School, Axel Honneth aims to find grounds for justifying social critique. To do so, Honneth departs from people's experiences of injustice and harm that spark societal struggle instead of abstract moral principles. Honneth argues that experiences of injustice are fundamentally experiences of misrecognition and that social conflicts are, in fact, struggles for recognition (Honneth, 1995). Inspired by Hegel, Honneth argues that people want, need, and expect to be recognised through different modes or spheres, namely love, law, and esteem (Honneth, 1995). Honneth correlates these to specific practical relations-to-self. In recognition through love, we learn self-confidence; in rights, we find self-respect; and in relations of cultural appreciation, we gain self-esteem. Good relations of recognition constitute one's identity, yet if we are not recognised properly, one's identity formation is distorted.

On the premise that a distorted relation-to-self is bad, the validity of claims of injustice can be evaluated. In other words, it is the "normative presuppositions of

human identity formation which are, in turn, linked to the experience of recognition" that legitimate claims of injustice (Honneth, 1995). If societal institutions structurally lead to distorted self-relations of social groups, it can legitimately be claimed that those institutions are unjust. Social change should improve (the institutional conditions for) relations of recognition so that more people can be recognised better, and this equals moral progress.

Nancy Fraser critiques Honneth's approach to recognition for being unable to properly distinguish between legitimate and illegitimate claims of injustice (Fraser & Honneth, 2003), for two reasons. First, Fraser argues that experiences of injustice are *insufficient* for justifying injustice claims. She argues that from Honneth's theory, "It seems to follow that claims for recognition that enhance the claimant's self-esteem are justified, while those that diminish it are not. On this hypothesis, however, racist identities would merit some recognition, as they enable some poor "white" Europeans and Euro-Americans to maintain their sense of self-worth by contrasting themselves with their supposed inferiors" (Fraser & Honneth, 2003). Fraser, therefore, argues that we do not want to formulate social and political problems as psychological problems only. Second, experiences of injustice are also *not necessary* for legitimate claims of injustice. This is because injustices can occur without the victim experiencing injustice. For example, an 18th-century maid may consider it just to be beaten by her lord because she sees herself as unworthy of more respect (Iser, 2019). Socialisation and internalisation have shaped her expectations, so she does not expect to be properly recognised.

For these reasons, Fraser rejects Honneth's definition of recognition justice as self-realisation and proposes an alternative criterion for distinguishing legitimate from illegitimate struggles for recognition (Fraser, 2000). Fraser calls her stance the *status model of recognition* (opposed to the *self-realisation model*), as she understands recognition as concerned with institutionalised patterns of cultural value. Misrecognition, therefore, "targets injustices it understands as cultural" (Fraser & Honneth, 2003). Examples of cultural injustices are institutionalised domination, exclusion, marginalisation, ignoring, and disrespecting social groups. Fraser justifies the wrongness of misrecognition because it prevents people from "participating as a peer in social life" (Fraser & Honneth, 2003). She argues that "When, in contrast, institutionalized patterns of cultural value constitute some actors as inferior, excluded, wholly other, or simply invisible, hence as less than full partners in social interaction, then we should speak of misrecognition and status subordination" (Fraser & Honneth, 2003). Struggles for recognition are legitimate when they address cultural values that

impede the ideal of *participatory parity* (Fraser & Honneth, 2003). Xenophobes' claims for recognition, therefore, have no legitimacy.

5.2.3. Recognition as ambivalent

Although Honneth and Fraser disagree on their demarcation criteria for distinguishing legitimate and illegitimate struggles for recognition (an *undistorted relation-to-self* versus *participatory parity in social life*), they agree that recognition is a positive phenomenon and that misrecognition is unjust. Many environmental justice scholars have embraced this assumption and researched how misrecognition constitutes environmental injustices.

However, the assumption that recognition is an unequivocally good phenomenon has recently received critiques. In the recently published book *Recognition and Ambivalence* (Titus Stahl Judith Butler Axel Honneth, 2021), Honneth's and Fraser's[29] 'positive' conceptions of recognition are contrasted with 'negative' or 'ambivalent' views. According to the 'positive view', negativity in recognition refers to empirical instances where people are treated unjustly (Stahl, 2021). As a result, the debate between Honneth and Fraser focuses on distinguishing between legitimate and illegitimate claims of injustice. In contrast, other authors associate misrecognition *and* recognition with domination, violence, and aggression. In this 'negative view', legitimate struggles for recognition *may* (or, according to authors such as Althusser and Lacan, *will*)[30] nevertheless result in injustice or "affect individual lives for the worse" (Laitinen, 2021). In other words, although some struggles for recognition can be reasonably considered justified, recognition may still (re)produce undesirable or unjust results (Laitinen, 2021).[31] Therefore, seeking and granting recognition may not

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[29] And other authors, such as Habermas and Tully. This paper focuses on Fraser and Honneth due to their substantial uptake in environmental justice scholarship.

[30] Within the 'negative view', a central disagreement is whether recognition is always morally bad or whether recognition is ambivalent, meaning that it can contribute to justice in some cases while it may reproduce injustice in others. I argue that viewing recognition as 'always bad' is too extreme for two reasons. First, taking seriously the many critiques of individualistic and atomistic ideas of personhood, I accept a relational conception of autonomy and the self. This implies that recognition (and misrecognition, for that matter) is constitutive of personhood and thus cannot always be morally undesirable. Second, there are struggles for recognition that are emancipatory. Many struggles for recognition contribute (in my view) undisputedly to justice, such as struggles for equal voting rights for women.

[31] This is partly because recognition is a non-consequentialist notion of justice; adequate recognition is compatible with undesirable consequences and can conflict with other values.

necessarily be morally good but *ambivalent* or *dangerous*. This "negative view" is represented by several Indigenous scholars such as Franz Fanon (1952) and Glen Coulthard (2014), and by critical theorists such as Judith Butler, who claimed that recognition is both a norm we aspire to and simultaneously a vehicle for domination, and Jean-Jacques Rousseau, who considered *amour-propre* – which can be defined as "a form of self-love that drives human individuals to seek the esteem, approval, admiration, or love – in short – the recognition – of their fellow beings" – as the source of both good and evil (Neuhouser, 2008, p. 1).

In this chapter, I consider the argument that, in some cases, seeking or granting recognition can contribute to environmental injustice, even though it contributes to an undistorted relation-to-self or addresses an unjust institutionalised status order. In other words, recognition comes with certain dangers. In this, I understand 'dangers' as risks or probabilities of unjust outcomes; recognition *can*, but not *necessarily will*, contribute to injustice. As such, I defend a version of the 'negative view' on recognition that interprets ambivalence or negativity as *dangers of (re)producing injustice*.

Against this interpretation of the negative view, it can be objected that 'real recognition' has not been achieved if recognition (re)produces injustices. Theories of recognition, such as Honneth's and Fraser's, have tools to critique these unjust systems and diagnose the outcomes as misrecognition and therefore, the 'positive view' still stands. However, this does not refute the argument that recognition comes with the *danger* of (re)producing injustices, including (other modes of) misrecognition, as understood by Honneth or Fraser. Thus, understanding the ambivalence of recognition in terms of 'dangers of (re)producing injustices' is, in a sense, compatible with the positive view.

To systematically explore the dangers of recognition as debated in Critical Theory, I draw from a typology of four sets of critiques on positive approaches to recognition as summarised by the editors of *Recognition and Ambivalence* (Ikäheimo et al., 2021):

(1) The desire for recognition can reproduce unjust social norms (Section 5.3);
(2) Recognition can fix identities and cause polarisation (Section 5.4);
(3) Recognition can be dominating and can undermine well-being (Section 5.5); and
(4) Recognition can distort what is actually at stake (Section 5.6).

In the next four sections, I introduce each danger in general terms and illustrate the relevance of each danger for environmental justice through empirical examples of struggles for recognition in relation to energy infrastructures and policies. These

examples feature struggles for recognition that can reasonably be considered legitimate, yet recognition would hinder – instead of enable – environmental justice or lead to morally undesirable consequences. The examples are found in many different types of literature from different disciplines and through in-depth conversations with peers. They are chosen for their exemplary characteristics and thus showcase the relevance of the ambivalence of recognition in environmental justice in different global contexts.

5.3. Danger one: recognition can reproduce unjust social norms

The first danger states that recognition can reproduce injustice. Recognition is always sought against a backdrop of social norms (Lepold, 2021). In other words, a larger system of norms, values, identities, and expectations determines who and what is valuable or worthy of recognition (Stahl, 2021). People are recognized (i.e., valued and praised) if they act according to these norms and misrecognized (i.e., devalued, ignored, marginalized) if they do not, which harms their relation-to-self (i.e., a lack of self-confidence, self-esteem, or self-respect). In their desire for recognition, people often implicitly adhere to or identify with social norms. However, in an imperfect world, social norms may be unjust, disrespectful or constraining. People who desire recognition in such a world are prone to conform to unjust norms (Section 5.3.1). Moreover, the desire for recognition deters critique and social action, hiding the unjust nature of social norms (Section 5.3.1). As such, recognition can hide, overshadow, or draw attention away from injustice and eliminate the motivation for critique, thus reproducing injustice. Recognition is only emancipatory when it occurs in a system with just social norms or when it questions unjust norms and aims to replace them with more inclusive ones.

5.3.1. Seeking recognition can reproduce oppression and domination

The main concerns about recognition articulated in environmental justice literature relate to this first danger, specifically in (neo)colonial contexts (Álvarez & Coolsaet, 2020; Coolsaet & Néron, 2020; Whyte, 2017). To state the argument in general terms: in realities of hierarchy, privilege, oppression, domination, and (neo)coloniality, the dominant social groups – the oppressors – determine the backdrop of norms and identities against which recognition occurs. This backdrop may maintain stereotypes of inferiority and superiority that are widely internalised. The desire for recognition

motivates people to (implicitly) accept and reproduce these unjust background norms, identities, and hierarchies.[32]

This argument has been fleshed out by both Indigenous scholars and critical theorists. Already in 1952, Frantz Fanon argued that colonial structures produce colonial subjects that have internalised certain desires, modes of thinking, and value hierarchies, behaviours that support colonialism (Fanon, 1952). He described how colonial subjects seek recognition from their oppressors, thus ascertaining their own oppression, such as the desire of a black man to be recognised by white women. Similarly, French philosopher Louis Althusser argued that recognition is an ideological mechanism of the state to submit individuals to the dominant capitalist social order (Althusser, 1970). For capitalism to reproduce itself, people need to internalise the dominant (capitalist) ideology, including rules of morality and good behaviour, how to speak, and how to act. An ideology "hails or interpellates concrete individuals as concrete subjects", for example, as a boy or girl or as an employee (Althusser, 1970).[33] People learn to recognise themselves in this hailing, and so they become specific subjects. In other words, through recognition, the dominant ideology makes people adopt specific roles and identities that reproduce an ideology.

More recently, the feminist philosopher Kelly Oliver argued that marginalised groups "sense that they are lacking something that only their superior dominators have or can give them", namely recognition (Kelly Oliver, 2001, p. 9). Oppression creates not only the need for justice but also "the need in the oppressed to be recognized by their oppressors" (Oliver, 2001, p. 9). As such, recognition "can become a symptom of oppression rather than its cure. This means that marginalized individuals or groups must seek recognition from the very people or institutions responsible for their oppression" (Oliver, 2015, p. 764). Consequently, in contexts of oppression, the desire for recognition itself is suspect. Unjust social norms that form the background of relations of recognition become easily reproduced as oppressed people internalise and identify with them.

An example of struggles for recognition that can (re)produce unjust social norms occurs in Canada. Indigenous communities in Canada struggle for recognition, often incentivised by imposed energy infrastructures, such as pipelines (Hurlbert & Datta, 2022). However, attempts to oppose the development of energy infrastructures have

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[32] Theories of recognition, such as Honneth's and Fraser's, have tools to critique these unjust systems. As such, it can still be argued that there is misrecognition. However, this does not refute the argument that recognition holds the danger of reproducing injustices, including (other modes of) misrecognition.

[33] Althusser's famous and often-discussed example is police hailing: "Hey, you there!".

often been unsuccessful (Hurlbert & Datta, 2022). To understand this, Canadian scholar James Tully investigated the assumptions underlying modern constitutionalism. By looking at the historical making of Canada, he concluded that initial mutual recognition between the Indigenous communities and the settler colonialists was missing. Both cultural communities should have had the opportunity to consent to the constitution. Yet instead, the Indigenous people were seen as 'lower' societies in need of progress by the imposition of the modern constitution that uniformly treats all people as equals (David, 1999). As a result, Indigenous people are now forced to seek recognition within the legal and moral framework of the oppressor, "or they can refuse to play the game, in which case they become marginal and reluctant conscripts or they take up arms" (Tully, 1995, p. 56). More concretely, Coulthard (2014) illustrated how Indigenous peoples were 'recognised' through being able to participate in decision-making processes, yet this resulted in the internalisation of understandings and values and the social acceptance of extractive energy projects. The Canadian example illustrates how struggles for recognition hold the danger of (re)producing unjust colonial structures.

5.3.2. Seeking recognition can obstruct critique

As people seek recognition, they are prone to adopting existing social norms, and as a result, critique and social action against these norms become more difficult. An example that illustrates this is the case of a proposed tidal lagoon in Swansea Bay in Wales, UK (Roberts, 2021). In his dissertation, Roberts reports that people in Swansea have a "collectively low self-esteem" due to a series of historical events, including the reliance on coal and copper industries that declined around the 1900s, high levels of unemployment, the unesthetic rebuilding of the city centre after the WOII bombings (Roberts, 2021, p. 72). In the language of Nancy Fraser, it can be argued that the people in Swansea are marginalised and that the criterion of participatory parity in social life is not met. In 2011, Tidal Lagoon Power proposed to build a tidal lagoon in Swansea Bay. The lagoon was marketed with eye-catching visuals, and it promised to bring money and esteem to the local community. The lagoon would change the image of Swansea and thereby also the image of the self of its inhabitants. This narrative was very compelling, and most inhabitants still support the project.

However, the project entailed some risks, such as threats to the ecological system and marine life, social and ecological disruption due to sourcing the required rocks for the walls of the lagoon, and substantial financial risks for the investors, which include many inhabitants of Swansea. Arguably, supporting the project would implicitly

reproduce certain (capitalistic) assumptions, such as maintaining current energy consumption levels (e.g., green growth) that some consider unjust. However, the promise of esteem influenced the risk perceptions of citizens, downplaying the risks and amplifying the benefits (Pidgeon et al., 2003). As such, the desire for esteem hindered social critique. In 2018, the UK withdrew support for the project for value-for-money reasons.

This example exemplifies a struggle for recognition that can reasonably be considered justified yet features the danger of reproducing unjust norms and obscuring critique. Arguably, the example illustrates that this danger applies beyond contexts of severe oppression and domination, as is the case for Indigenous peoples in Canada.

5.4. Danger two: recognition can fix identities and cause polarisation

The second danger states that recognition can reproduce, fix and simplify identities and may subsequently cause polarisation between different social groups. In the age of identity politics, strong links have developed between identity and claims of misrecognition, as people often strive for the recognition of their cultural identity by organising themselves in social groups (Taylor, 1996). In this, social identities are not pre-existing entities waiting to be recognised. Instead, they are constituted through relations (of recognition) with other people and our environment, including the places we live in and the meanings and values associated with them (Groves, 2015; Groves et al., 2016). Identities are often also constituted in the face of threats and through collective struggles for the recognition of group identities, such as race, gender, or social class (Young, 1990).

The idea that recognition can fix people's identity was famously described by Jean-Paul Sartre (Sartre, 1943), Louis Althusser (Althusser, 1970) and Lacan (Lacan, 2006). In contrast to these authors, I do not consider the relational constitution of identity necessarily problematic because collective identities, such as race, gender, nationality and religion, inevitably shape who we are and how we see ourselves (Young, 1990). However, the relational constitution of identities presents two *dangers*.

First, identities can be undesirable, subordinating, exclusionary, or violent, causing harm to the self or others. People are encouraged to adopt identities and self-conceptions that promise recognition (Allen, 2010). As people identify with identity categories, the capacity to critique harmful categories becomes limited (Butler, 1999; Stahl, 2021). People may be encouraged to adopt harmful identities, which are then reproduced through time.

Second, identities can become 'too fixed'. Naturally, all identities are stable to a certain extent – yet some identities may be 'too' persistent in the face of change. Although more theorising is necessary here, for the purpose of this chapter, I consider identities as 'too fixed' when their resistance to change becomes harmful to the self and to others.

On the one hand, a 'fixed' identity can harm the *self*. Members of social groups identify with a particular group identity, which simplifies their identity to a certain extent (Pesch, 2021). Nancy Fraser describes how identity politics "can put moral pressure on individual members to conform to a given group culture", which "denies the complexity of people's lives" (Fraser, 2000, p. 112). Relatedly, philosopher Patchen Markell states that the politics of recognition presupposes that identity is a fait accompli (Markell, 2003). However, according to Markell, identity is never fixed; rather, it is fundamentally open-ended and can only be recognised retrospectively. To deny the open-endedness of the identity of oneself and others, Markell argues, is what truly constitutes injustice.

On the other hand, 'fixed' identities can harm *others*, as they may result in polarization. When social groups struggle for recognition, group identities may grow stronger and develop in opposite ways, partly based on shared disapproval of other groups. According to Fraser, "this sort of identity politics scarcely fosters social interaction across differences: on the contrary, it encourages separatism and group enclaves" (Fraser, 2000, p. 113). Polarisation implies that adversaries become enemies and agonistic conflict becomes antagonistic (Mouffe, 2005). Fixed identities may lead to a lack of solidarity and respect for others and even to violence or oppression, threatening democracy.

The example in 5.4.1 combines both elements and testifies how an unjust identity can become 'too fixed', harming both the self and others. Section 5.4.2 shows how struggles for recognition may result in polarisation amongst social groups whose identities become too entrenched. Both examples illustrate the relevance of this danger to environmental justice and in contexts beyond coloniality.

5.4.1   Seeking recognition can fix unsustainable identities

A striking example of how recognition can fix identities can be found in a study by Thomas et al. on Port Talbot in South Wales (Thomas et al., 2022). Port Talbot has always heavily relied on fossil labour, and as such, the identities of some inhabitants have become entrenched with the place and the industries in it. For example, the identity of being a steel worker has been infused with a sense of pride, and as such, it

has become a source of recognition and an attractive self-image to adopt. Such identities were disrupted when faced with the need to decarbonise and the closure of power plants. Thomas et al. reported that "discourses of decline spoke to a damaged sense of industrial identity, anxieties over environmental quality, and feelings of betrayal by authorities", which can be understood as experienced misrecognition (Thomas et al., 2022, p. 88). People struggle with stigmas such as "Port Toilet".

People seek to reinvent their identities to make sense of the changing context. Some people experience industrial nostalgia, including the loss of pride and "local camaraderie engendered by the danger and physical hardship such labour often required" (Thomas et al., 2022, p. 83). A minority even considers industrial identities a "prideful identification worthy of defence" (Thomas et al., 2022, p. 85). This defence may entail the desire to sustain the dominant economic system. Moreover, perceived damage to industrial identities can generate "cynical registers and feelings of communal ruination reinforced assumptions that status quo forms of energy provision", which, not unreasonably, makes some participants distrustful of or hostile to potential moves towards decarbonisation (Thomas et al., 2022, p. 87). Moreover, industrial identities can be linked to "rigid gendered practices which no longer fit with the new realities of the town" (Thomas et al., 2022, p. 83; see also Walkerdine, 2010). It can be assumed that this persistent quest for the recognition of industrial identities simultaneously harms multiple actors.

5.4.2. Seeking recognition can cause polarisation

Many conflicts around environmental justice and energy infrastructures are rooted in local contexts and/or identities, and therefore, the risk of polarization is eminent in struggles for recognition. For example, ecofeminism can give rise to reactionary forms of masculinity. In ecofeminist movements, issues of gender and climate change are conceived as interconnected. Such movements impact men and masculine identities, producing either attempts to reconstruct masculinities or a backlash (Connell, 1990). In the latter case, ecofeminist struggles for recognition are perceived as a threat to masculinities that have become entrenched in fossil fuel systems, linking manhood with diesel trucks, mining jobs, and extraction (Daggett, 2018). This has led to the construction of *petro-masculinity*, which is a reactionary response that "aims to defend the endangered *status-quo*, entrenching the petrocultures that have historically propped up Anglo-European fossil-burning men" (Daggett, 2018, p. 34). In petro-masculinity, gender anxiety and climate anxiety collide, leading to fossil violence, climate denial, and votes for Trump (Daggett, 2018). As such, petro-masculinity is a reactive and

polarizing gender identity constructed in response to ecofeminist struggles for recognition.

5.5. Danger three: Recognition can be dominating

Jean-Jaques Rousseau already argued that seeking recognition and being recognised can be freedom-undermining (Rousseau, 1755). He claimed that recognition or *amour-propre* can generate good outcomes and well-being, such as love, friendship, and recognition of people's equal moral standing, but it is also the source of all evil, as it motivates people to install inequalities, engage in conflict, and act unauthentically and according to vices, harming people's autonomy and well-being (Rousseau, 1755). To explore how recognition can be dominating in the context of environmental justice, I draw inspiration from Neuhouser's interpretation of Rousseau (Neuhouser, 2008), who summarised that *amour-propre* is dangerous in five ways, namely (1) enslavement or loss of integrity; (2) seeking superiority; (3) violence and cruel behaviour; (4) hypocricy and pretense; and (5) inflated self-conception (see table 10). These dangers, all connected to domination, follow from intrinsic properties of recognition, and they are clustered and discussed in the remainder of this section in relation to contributions from Critical Theory and illustrative examples.

Table 10. Five ways in which amour-propre endangers the autonomy and well-being of the self or others, according to Neuhouser's interpretation of Rousseau.

Five dangers of *amour-propre*	Description	Why this is undesirable	Cluster
Enslavement / loss of integrity	Letting the values and preferences of others dictate your actions	Misery; self-estrangement/alienation; Enslavement	*Seeking recognition can lead to enslavement or a loss of integrity (Section 5.5.1)*
Hypocrisy and pretense	Caring more about perceptions than reality	Misery; self-estrangement/alienation; Vice	
Infect all life's activities	The drive to seek esteem is so passionate that it can consume one's life, and inspire violence or cruelty	Misery; Vice; Conflict	*Seeking recognition can dominate one's life (Section 5.5.2)*
Seeking superiority	'Doing well' turns into 'doing better' than others	Misery; Vice; Conflict	*Seeking recognition can become the desire to dominate others (Section 5.5.3)*
Inflated self-conception	Demanding more recognition from others than appropriate	Misery; Vice; Conflict	

5.5.1. Enslavement or a loss of integrity

Recognition can lead to enslavement or a loss of integrity because the individual has little to no control over the system of norms, values and expectations that determine what and who is valuable or worthy of recognition (Stahl, 2021). As such, individuals seek recognition on the terms of the collective, not on their own terms (van den Brink & Owen, 2007). The value system strongly steers or constrains individuals in their options, and as such, recognition can become a "source of freedom-undermining domination" (Stahl, 2021, p. 161). In this, domination can be defined as "structural or systemic phenomena which exclude people from participating in determining their actions or the conditions of their actions" (Young, 1990).

Although dependence on a collective is inevitable and thus not necessarily problematic, "any form of dependence carries with it the *danger* that individuals will have to compromise their freedom in order to satisfy the needs that impel them to seek the cooperation of others" (Neuhouser, 2008, p. 78, italics added). In other words, recognition may restrict one's autonomy *too much*. Dependence becomes *enslavement* once the values and preferences of others dictate one's actions *too much*. More specifically, "enslavement is that one obeys – acts in accordance with – the will (ends, preferences, or values) of another. This definition implies that the unfree person has an identifiable will of his own but, for whatever reason, is unable to act in accordance with it", which can be seen as a *loss of integrity* (Neuhouser, 2008, p. 80). Enslavement or a loss of integrity is problematic in its own right. Moreover, it leads to self-estrangement, alienation, or "existing outside oneself", which is detrimental to one's well-being (Neuhouser, 2008, p. 83).

An example can be found in various unsustainable behaviours, such as flying. There are strong social norms that evaluate flying as 'cool' – celebrities do it – (see for example Gössling, 2019) or as 'necessary for your job'. In parallel, social norms arise that consider flying a source of shame instead of esteem (Dolšak & Prakash, 2022; Gössling et al., 2020). Although many individuals may have beliefs or values that urge them not to fly, they may not act on them due to the pressure of social norms that associate flying with esteem. In these cases, flying behaviour leads to cognitive dissonance, guilt, and a loss of integrity. In other words, people crave esteem, which might enslave them to dominant – in this case, unsustainable – social norms.

Because "esteem is based on *opinions* others have of oneself rather than on the realities those opinions are supposed to reflect" (Neuhouser, 2008, p. 87), the struggles for recognition can also lead to vices such as hypocrisy, cunning, and pretense. People might care more about appearances and perceptions than reality and may aim to be

perceived as praiseworthy without actually being so. For example, people might fly even though it contradicts their deepest beliefs, which is hypocritical – or they might lie to their peers about flying for leisure, to not lose esteem in their eyes. In both examples, unsustainable social norms dominate one's behaviour, and the strong urge for recognition leads to vice, shame and unhappiness.

5.5.2. Seeking recognition can dominate one's life

According to Rousseau, *amour-propre* is an extremely passionate and ferocious desire, and as such, it is a very strong motivator of human action. This is because "what is at stake is, in some sense, the very being of the self" (Neuhouser, 2008, p. 73). To be recognised is to be seen as real, worthy, and valuable. As a result, the desire for recognition can consume people, "leading them to forsake other, less urgently felt pursuits and to focus single-mindedly on winning the esteem they feel deprived of, often at the expense of their other, 'non-relative' interests", leading to unhappiness (Neuhouser, 2008, p. 72).

There are several examples highlighting this danger. In 2006, environmental justice scholar Figueroa argued that misrecognition can be remedied through restorative justice; however, "Victims are often placed under great stress when dialoguing with their offenders. And offenders may in fact get too much credit for agreeing to take part in the restorative justice process, while victims are put in a position where they must take responsibility for rehabilitating the offender" (Figueroa, 2006, p. 373). Similarly, in a conflict on gas storage infrastructure in the Netherlands (see Chapter 3), several participants testified that being an activist is highly demanding. One participant stopped after six years because they felt absolutely devastated, and another testified: *"It becomes a part of your life which takes up a lot of time and stress"*. In sum, struggles for recognition can dominate one's life, which may have undesirable and unjust effects on the claimants' well-being.

5.5.3. Seeking recognition can become the desire to dominate others

Amour-propre is a positional good; people seek social standing, which is inherently relative and comparative. The desire to be recognized as *good* can easily lead to the desire to be recognized as *better than others*. As such, people may seek superiority or even domination over others, leading to violence and cruelty.[34] *Amour-propre* "provides

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[34] This may explain why struggles for recognition sometimes lead to polarisation, see section 5.4.2.

humans with a powerful incentive to invent new forms of inequality, the purpose of which is to create a nearly unlimited range of opportunities to satisfy their need to acquire a valued standing in the eyes of, and in relation to, others" (Neuhouser, 2008, pp. 11-12). Yet, it is impossible to satisfy everyone's desire for superiority. This engenders not only unhappiness but also conflict and vice, as people are tempted to rejoice in or inflict "not physical but moral suffering through scorn, contempt, derision, and a host of similar attitudes that aim at humiliating – lowering the standing of – those one seeks to be better than" (Neuhouser, 2008, p. 78).

The likelihood of this danger increases when people have an inflated self-conception. In these cases, people "exaggerate their own merits and thus demand more recognition from others than they have reason to expect" (Neuhouser, 2008, p. 88). People might (consciously or unconsciously) inflate their achievements or falsely regard certain qualities – such as skin colour or gender – as praiseworthy. An inflated self-conception and self-overestimation leads to people demanding more recognition from others than they are entitled to. This leads to unhappiness, vicious behaviour and conflicts between people. Examples are widespread. For example, Henwood et al. have shown that men tend to "speak authoritatively about science and technology, while the women were far more likely to overtly express doubts, hesitancies and uncertainties" (Henwood et al., 2014, p. 172). They deduce that people with more power - including enjoying hegemonic masculinity and being a white male (Flynn et al., 1994; Henwood et al., 2014) – are more likely to accept more risk.

5.6. Danger four: Recognition can distort what is actually at stake

The fourth critique focuses mainly on using recognition as a single tenet to understand injustice. The critique is focused on using the *language* of recognition as a conceptual and analytical tool for understanding or articulating injustice. Recognition has been introduced by Taylor as a way of understanding claims of injustice related to identity that has become prevalent in contemporary politics (Taylor, 1996), an endeavour that was pursued in-depth by Honneth, who studies "the moral grammar of social conflicts" 0(Honneth, 1995). The critique points out that, in times of identity politics, injustices may be incorrectly described as misrecognition, distorting what is actually at stake.

Nancy Fraser calls this the *problem of displacement*. She is concerned with the language social groups use when formulating claims of injustice. She observes that, in the era of identity politics, people are prone to analyse problems as misrecognition,

demanding recognition as a response. However, maldistribution as a source of injustice should not be forgotten (Fraser & Honneth, 2003). She argues that formulating a grievance as misrecognition may "marginalize, eclipse and displace" claims of maldistribution (Fraser, 2000, p. 108). When an injustice is mainly caused by economic mechanisms, demanding recognition will not provide an adequate solution – instead, it will distract from the real source of the problem.

In environmental justice, however, the common practice is to use a multiple tenet framework that includes not only recognition justice, but also distributive, procedural, and sometimes restorative justice (Hazrati & Heffron, 2021b; Schlosberg, 2007). Therefore, the framework partly mitigates the critique that recognition as an analytical category is insufficient – and thereby, the danger of obscuring distributive injustices. However, the danger still exists that the language of recognition is wrongly used to characterise the nature of a specific injustice as cultural, even though it has significant distributive components. Environmental injustices often have significant material and structural roots in infrastructures and technologies as sociotechnical systems (see for example Walker & Day, 2012), and a sole focus on identity politics and cultural marginalisation may displace such explanations.

5.7. Conclusion

The language of recognition has become increasingly important in environmental justice scholarship for understanding claims of injustice. In this chapter, I explored the dangers of recognition for environmental justice. The main motivation for this is that while struggles for recognition can be legitimate, they may also engender or reproduce injustices or harmful identities, sometimes in very subtle ways. Building on concerns voiced in environmental justice literature, I extended the analysis of dangers through engagement with Critical Theory, in which four dangers are distinguished, namely (1) recognition can reproduce unjust norms, such as extractive capitalism and colonialism, by obstructing critique; (2) recognition can fix identities, such as toxic masculinities and unsustainable identities, and cause polarisation between different social groups; (3) recognition can be dominating, and (4) the language of recognition can distort what is actually at stake. Moreover, through examples, I have demonstrated the eminence of each danger for environmental justice in different global contexts due to intrinsic features of recognition, as it is a ferocious desire deeply intertwined with our identities and prevailing social norms.

Outlining the dangers of recognition is relevant for environmental justice scholars who engage with the notion of recognition justice. Perceiving recognition as

ambivalent invites researchers to distinguish between (1) studying the *legitimacy of the environmental justice movements' claims for recognition* and (2) studying the *legitimacy of the implicit values, norms, identities, and outcomes that are (re)produced through seeking and granting recognition*. The first aspect is central in the debate between Honneth and Fraser, as they discuss criteria for distinguishing between legitimate and illegitimate claims of injustice. However, in some cases, legitimate struggles for recognition may still reproduce injustices, reify identities, undermine autonomy and well-being, or hide what else is at stake, thus hindering emancipation. In other words, legitimate struggles for recognition can either reproduce or reject unjust norms. The latter struggles are truly emancipatory; the former struggles are rather conservative, and while they might bring temporary relief for the social group that is misrecognised, they can also reproduce or exacerbate injustice. As such, the moral nature of the norms that are reproduced through recognition should not escape critical scrutiny. By merely using a positive view on recognition, potential unjust side effects may be obscured. Insights into the dangers of recognition give more depth to analysing grievances voiced by social justice movements.

When striving for environmental justice, knowing the dangers that seeking and granting recognition can bring is crucial. Therefore, this analysis is also relevant for social groups and activists who struggle for recognition, as it might shed light on the pitfalls of their struggle and help the movement become truly emancipatory. Lastly, this chapter is relevant for 'those who do the recognising', which includes all of us continuously, especially policymakers, scientists, and engineers, due to their undeniable influence on institutions and (energy) systems. People (mis)recognise each other continuously through formal and informal institutions, and as such, it is vital to reflect critically on the norms and identity categories that underlie both struggles for recognition and granting it.

6. Detecting Energy Injustices: Climbing the Ladder of "Hidden Morality"

Van Uffelen, N. & Ten Caat, S.[35]

6.1. Introduction

Transitioning from a fossil-based energy system towards renewable energy is one of the main challenges of the 21st century, not least because energy transition policies are prone to spark social resistance and energy conflicts (Pesch et al., 2017). Energy technologies, systems, projects, and policies significantly impact societies and nature, as they often disrupt the landscape, affect the environment, influence behaviour, bring about safety concerns, and exacerbate inequalities. Many scholars have studied the reasons for social resistance and protests against energy policies and infrastructures, concluding that NIMBY-ism, selfishness and interests have little explanatory power (Batel, 2020; Batel et al., 2013). Instead, people are mostly motivated by experiences of injustice, in relation to their identities that are relationally shaped by attachments to places, practices, and people (Cuppen et al., 2019; Dignum et al., 2016; Groves et al., 2016; Roeser, 2017). Social resistance and protests against energy policies can often be understood as moral concerns about justice.

Policymakers are demanded to reconcile energy and social policies, which can be understood as the challenge of organising a *just energy transition*. Dealing with the just transition challenge requires detecting and anticipating energy injustices. In 2013, researchers were challenged to "address justice-based concerns within energy systems" by studying energy injustices and making policy or design recommendations (McCauley et al., 2013). Such injustice concerns surface through institutional and non-institutional participation procedures (Hooghe & Marien, 2013). A first way to

uncover what the publics perceive as unjust is by inviting the publics for official meetings or participation events, which Wynne described as *invited publics* (Wynne, 2007). For example, the Dutch government prescribes local participation processes for decision-making related to the energy transition (Rijksoverheid, 2019). In such participatory settings, the invited publics can voice their values and concerns, in other words, their perceptions of injustice. In this, the publics can have various levels of influence, from effective decision-making power to an advisory role in which stakeholders' knowledge and values are consulted to inform decision-making (Jenkins et al., 2016).

Another method for uncovering what people perceive as unjust is by studying *uninvited publics* (Wynne, 2007) engaging in pro-active, self-initiated, or non-institutionalised participation. This includes energy conflicts, resistance, protests and controversies (Jenkins, Sovacool, et al., 2020). Here, it is assumed that injustices inspire citizens to resist energy policies or projects by means of activism. Understanding what constitutes energy conflicts is the aim of several papers on the intersection of energy justice and conflict or controversy studies (Cuppen et al., 2015, 2020; Pesch et al., 2017). Methods of detecting moral concerns vary from conducting surveys, organising interviews, meetings or consultations, or doing Social Impact Assessments (Esteves et al., 2012) and Participatory Value Evaluations (Mouter et al., 2019, 2021). Such research endeavours assume that "public debate can form a rich source from which to retrieve the values at stake" (Dignum et al., 2016). In other words, studying the roots of energy conflicts leads to detecting perceived energy injustices that can inform decision-making towards a more just energy system.

To sum up, current methods for detecting what the publics perceive as (un)just rely on explicit articulations of beliefs by citizens in official participatory settings or during energy conflicts. However, it is implausible that all injustices manifest within these contexts. For example, many municipalities in the Netherlands struggle to organise inclusive participation trajectories that involve truly diverse publics (Buitelaar & Heeger, 2018; Jansma et al., 2020; Samantha Scholte, Yvonne de Kluizenaar, Tim de Wilde, 2020). Moreover, not all citizens easily engage in public resistance. As a result, not all energy injustices are detected, understood and mitigated. To understand and overcome this problem, it is important to explore which mechanisms prevent injustices from surfacing and being resolved in decision-making. Our research question is as follows: What mechanisms keep injustices hidden and unaddressed?

This study introduces a concept that is helpful in understanding why injustices might remain unseen and unaddressed, namely *the problem of hidden morality* (Honneth,

1982). The term was coined by the philosopher Axel Honneth, who is primarily known in the energy justice scholarship for theorising justice as recognition. Honneth posits that there are several steps between the occurrence of injustices and social change. Inspired by his explorations, we analysed two case studies in the Netherlands in which injustices occur, yet do not result in social change. We use the results of these case studies, supplemented with philosophical and empirical literature on justice, participation, and social change, to construct a framework of hidden morality that outlines six steps between the occurrence of an injustice and social change: (1) injustices are experienced as "negative emotional reactions" (Honneth, 1995, p. 154); (2) injustices are expressed as claims of injustice; (3) people collectively organise themselves and engage in collective action; (4) claims are taken up in the public discourse; (5) claims are reformulated positively; and (6) actual social change addressing the injustice. Between each of these steps, different obstacles can arise.

The contribution of this chapter is twofold: it raises awareness of the fact that injustices can remain hidden, and it proposes a conceptual framework that identifies mechanisms that prevent injustices from surfacing and being addressed. We propose the framework of hidden morality as a promising avenue for future research on detecting and understanding hidden energy injustices. Moreover, understanding which and why injustices remain hidden is the first step towards making energy systems more just, and the framework of hidden morality is the first systematic tool for policymakers to detect or anticipate injustices when making just energy policies.

The chapter proceeds as follows. In Section 6.2, the problem of hidden morality is introduced by articulating six steps from experiencing an injustice to actual social change. Section 6.3 elaborates on the methods for analysing the two case studies. In Section 6.4, the results are presented in the form of the mechanisms that prevent injustices from surfacing and leading to social change. In Section 6.5, the hidden morality framework is constructed, based on the results from the case studies and philosophical literature. Section 6.6 explores the policy implications of the hidden morality framework and concludes.

6.2. The problem of hidden morality

Energy justice is the academic field concerned with uncovering and analysing injustices in relation to energy policies. Generally, energy injustices are analysed through a tenet-framework that distinguishes multiple categories ("tenets") of justice (McCauley et al., 2013). *Procedural justice* refers to just decision-making procedures;

distributive justice refers to a just distribution of burdens and benefits; *justice as recognition* is concerned with recognising all actors through love, law, and status order (Uffelen, 2022); and *restorative justice* implies the just restoration of injustices or harm (van Uffelen et al., 2024). Distinguishing these tenets and different conceptions thereof allows to categorise, analyse, and understand grievances articulated by citizens in relation to energy technologies, systems, and policies.

Although much scholarly attention has been given to frameworks to *analyse* energy injustices, a consistent framework focused on *detecting* injustices and the mechanisms that hide them is lacking. Several scholars have shown how energy injustices – predominantly energy poverty – can remain hidden. For example, energy poverty measured as "spending a disproportionate share of income on energy" can remain hidden when people restrict their energy consumption (Barrella et al., 2022). Moreover, people in energy poverty are often socially isolated and hesitant to reach out for help due to stigmas and shame (Bredvold & Inderberg, 2022; Garthwaite, 2015; Middlemiss et al., 2019; Rincón-Rubio & Cedano-Villavicencio, 2023; Shildrick & MacDonald, 2013). There are several frameworks within behavioural psychology to better understand behaviour in relation to climate and energy issues, such as the attitude-behaviour-context-model (Stern, 2000). However, such models have different functions, namely explaining (climate-related) behaviour, and are not focused on detecting injustices. Currently, there is no conceptual tool available within the field to think about undetected and unaddressed injustices and the mechanisms that systematically hide them. This chapter proposes such a framework. As such, the proposed framework does not replace the tenet-framework to analyse injustices, or the ABC-framework to explain behaviour; we consider it complementary, as it focuses on (obstacles to) *detecting* energy injustices.

In one of his early essays, the philosopher Axel Honneth gave the problem of undetected injustices a name: *hidden morality* (Honneth, 1982). In this essay, Honneth argues that relying on public discourse to detect injustices is insufficient because not all injustices find their way to such settings. Honneth distinguishes between *well-developed, normatively based ideas of justice* and a *consciousness of injustice*. The former are well-formulated, structured ideas about justice and the right course of action. The higher social strata in society generally hold these ideas. A consciousness of injustice on the other hand is often emotional, fragmented, situationally dependent, unwritten, and experience-bound. Generally, only well-developed and articulated ideas of justice surface and land well in public discourses. Experiences of injustice, on the other hand, often remain hidden from the public debate. This empirical blindness is

conceptualised by Honneth as *hidden morality*, implying that some injustices remain undetected.

In his essay, Honneth starts to explore why injustices might remain hidden and fail to result in social change, in other words, what constitutes the problem of hidden morality. One reason is that not all people can experience injustices, and as such the injustice remains unarticulated. For example, an individual can be in energy poverty without realising it. Moreover, not all experienced injustices are always expressed or translated into constructive policy proposals. If people succeed in articulating injustices, there is no guarantee that others hear these claims, partly due to their negative formulations. And if claims of injustice reach the public debate, they are not always followed by social change. These insights can be summarised as six different 'steps' between the existence of an injustice and its mitigation, which we will visualise in Section 6.5 as the ladder of hidden morality:

(1) Injustices are experienced;
(2) Injustices are expressed as claims of injustice;
(3) People collectively organise themselves and engage in collective action;
(4) Claims are taken up in the public discourse;
(5) Claims are reformulated positively; and
(6) Actual social change addressing the injustice.

Now, it can be clarified what we mean by 'detection'. *Detecting* injustices refers to the identification, acknowledgement, and consideration of injustices by actors with decision-making capacities. In general, several actors can do the detecting, such as individuals or actors who have decision-making capacities, such as policymakers or engineers. In the steps in between, many other actors play a role in detecting injustices, such as researchers, the media, community groups, or businesses. When an injustice is detected only by individuals or other societal actors, yet they remain hidden from agents in power, it is possible to speak of 'partial detection'. When an injustice remains partially hidden, social change addressing the injustice does not occur.

As a last remark, Honneth speaks of hidden *morality* because people's experiences of injustice are morally relevant. Experiences of injustice often translate to "negative emotional reactions, such as being ashamed or enraged, feeling hurt or indignant" (Honneth, 1995, p. 136). Such moral emotions are important indicators of actual injustices; thus, it is important to take these emotions seriously (Roeser, 2017). In other words, a lack of social acceptance can reveal an ethical unacceptability (Taebi, 2017). When experiences of injustice remain hidden, actual injustices might remain undetected and continue to exist. However, experiences of injustice cannot be

identified with actual injustices. People's moral intuitions are fallible, for various reasons (see Section 6.5.1). Although experiences of injustice are an indicator of actual injustices, additional ethical reflection and argumentation[36] are necessary to evaluate whether these experiences correspond to actual injustices.

6.3. Methods

To better understand the mechanisms contributing to hidden morality, we analyse two case studies in which (experiences of) injustices occur without ensuing social change, in other words, in which injustices are hidden. Each case study represents a different 'stage' of hidden morality and as such, they are complementary. The first case study pertains to the injustices that citizens with low socio-economic status and a migratory background face in relation to the heat transition in Moerwijk, The Hague, in the Netherlands. As there is hardly any collective action addressing energy injustices in Moerwijk, participants seem 'stuck' on the first three steps of the hidden morality ladder. In contrast, the second case study mainly pertains to the final four steps of hidden morality. This case pertains to the conflict around compensation for damage in relation to Underground Gas Storage (UGS) Grijpskerk and Norg in the North of the Netherlands. Here, collective action occurred, with mixed results.

6.3.1. The heat transition in Moerwijk, The Hague

The first case study focuses on experiences of the heat transition in the neighbourhood Moerwijk in the city of The Hague in The Netherlands (ten Caat et al., 2024). For Dutch households, the heat transition mainly concerns the phase-out of natural gas, commonly used in the Netherlands for heating and cooking. Between April and June 2022, 26 semi-structured interviews were conducted with citizens with low socio-economic status and a migratory background. Within the Dutch context, this group of citizens is especially vulnerable to exclusion from (political) communities and public participation, and municipalities struggle with including their needs in policies.

Because this target group is typically difficult to reach, participants were found by visiting activities organised by the neighbourhood and a housing corporation, and by door-to-door efforts. To navigate language barriers, all invitations to participate in the study, prepared interview questions and visual aids used during the interviews were

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[36] One such strategy is that of immanent critique, which will be deployed in the case study of Moerwijk in The Hague.

translated into multiple languages. Participants were asked about their knowledge, perceptions and opinions of (participation in) the heat transition and about their relations with their neighbours and relevant institutions.

In this case study, it is possible that injustices occur yet are unexperienced by the participants. To study this, transparency about what we consider as 'injustice' is crucial. In this analysis, we identify (in)justices by comparing the conceptions of '(in)justice' of the municipality of The Hague – as found through an analysis of policy documents – with the empirical reality. This move constitutes an *immanent critique*, as an institution is considered unjust by its own standards (Fraser & Jaeggi, 2018). For example, if the municipality states that all citizens should be informed about something, yet the empirical reality shows that this is not the case, the situation is unjust by the municipality's own standards. Although the conceptions of the municipality may be critiqued, the immanent-critique approach allows us to study the mechanisms that hide injustices, which is the purpose of this chapter.

The data analysis combined inductive and deductive coding using atlas.ti. The analysis was guided by the six steps between the existence of an injustice and its mitigation (see Section 6.2). Given the absence of collective action in this case study and the theory-building purpose of this chapter, the analysis focused on the first three steps of hidden morality. These steps formed the code groups, which were further subdivided along the tenets of energy justice. For the code groups on 'expressing injustices' and 'collective action', the codes were inductively formulated. Given the methodological challenge of coding for inexperienced injustices, codes within the code group 'experiencing injustices' were deductively created, based on the municipal conceptions of (in)justice. We present the (un)experienced injustices and the mechanisms hiding these in Section 6.4.1.

6.3.2. Gas storage in Grijpskerk and Norg

The second case study is a qualitative investigation of the societal unrest above Underground Gas Storage (UGS) Grijpskerk and Norg in the North of the Netherlands (Van Uffelen, 2024 – see also Chapter 3). The main conflict pertains to the compensation system for damage that results from the UGSs.

Between March and May 2022, 30 semi-structured interviews were conducted with (activist) citizens, scientists, and governmental organisations related to mining in the Netherlands. A balance was sought in finding interviewees between active citizens and interviewees from different institutions. The interviewees were found through snowballing, and the sample was supplemented by proactively contacting

underrepresented parties. The interviews were conducted both online and in the regions surrounding Grijpskerk and Norg and focused on understanding the conflict and the concerns of stakeholders.

In this case study, we remain formally agnostic about whether or not the experiences of injustice, as voiced by the participants, are ethically justified. This is because the main function of this case study is to study the barriers on 'higher' levels of the ladder, including obstacles in relation to collective action, public uptake, positive reformulation, and social change.

A qualitative thematic analysis was conducted on the data using atlas.ti to identify the themes on which there is conflict or that participants experienced injustices towards (Braun & Clarke, 2006). First, the interviews were coded inductively (subthemes); second, the codes were clustered into seven themes. Four themes pertain to the topic of conflict; as such, they signify the content of the experiences of injustice. The remaining three themes were relevant to the problem of hidden morality, namely (1) activism and awareness, (2) perceptions about regional and national identities, and (3) participation in decision-making procedures. In Section 6.4.2, we link the findings pertaining to these three themes and their subthemes to the final four steps of hidden morality as outlined in Section 6.2.

6.4. Results

6.4.1. The heat transition in Moerwijk

In the first case study, actors were mainly subject to barriers to the first three steps of the ladder: experiencing injustices, articulating them, and organizing collective action, making them unable to achieve social change (ten Caat et al., 2024). Table 11 summarises the result.

Table 11. The obstacles between injustices and social change in the heat transition in Moerwijk.

The ladder of hidden morality	Obstacles in the Moerwijk case	Examples of quotes by inhabitants in Moerwijk
Collective action	• Low social cohesion due to language barriers and discrimination • (Perceived) incentives to isolate households	*"Because it is so racist here, I do not involve myself."* *"Everyone receives a different treatment. Who can speak up, who talks well: they get all the good things."*
Expressing an injustice	• Fear of repercussions • Language barriers	*"They do not dare to share their opinion. And, that stems mainly from their fear that the housing corporation would hold a grudge against them, for example."* *"I speak to little Dutch, I understand too few Dutch words. I found it real hard."*
Experiencing an injustice	• Lack of knowledge of rights and possibilities • Socialisation (incl. harmful past experiences) leading to low expectations	*"What are my rights to request things? What should I receive according to my rights?"* *"I have learned to be content with what I get. (…) Because I have had it worse, you know?"*

Experiencing injustices

Municipal policies stated that inhabitants had the right to be informed about the heat transition (e.g., why it is important and what it would mean for the citizens), and that they had the right to participate in decision-making. This information should have been shared well before housing corporations started on the renovations to peoples' homes. However, nineteen interviewees had their homes renovated, yet they were either ignorant about the heat transition or unaware that they could have had a say in matters. As such, nineteen interviewees were unable to experience a procedural injustice, even though they were subjected to it.

The main barrier to experiencing these procedural injustices was the interviewees' lack of knowledge about rights as Dutch citizens, including participation possibilities and the services and information they should have received from the municipality and the housing corporations. They wondered: *"What are my rights to request things? What*

should I receive according to my rights?" This lack of knowledge extends to a lack of familiarity with democratic regimes in general.

Another barrier to experiencing injustices was low expectations among respondents about how the municipality should treat them. For three interviewees, harmful experiences in their previous countries of residence hindered them from experiencing injustices. They saw any treatment they received in the Netherlands as comparatively positive and just. As one interviewee explained: "*I have learned to be content with what I get. (…) Because I have had it worse, you know?*" In essence, socialisation in unjust systems provided participants with low expectations of how they should be treated, rendering them unable to experience the energy injustices they were subjected to.

Expressing injustices

Except for the three interviewees with harmful past experiences, who did not experience any injustices, all others did experience injustices. As such, most interviewees were unaware of some injustices and aware of other injustices. Some interviewees did not experience injustices caused by the municipality but were aware of those caused by housing corporations, and vice versa. Others expressed misrecognition because they felt underrepresented in decision-making ("They talk about us, not with us"). Most concerns are related to procedural issues, and a handful of interviewees also discussed distributive injustices ("Housing corporations receive lower costs, but we inhabitants are set back"). Participants were able to express their grievances in the interviews but encountered barriers in communicating these to other people or organisations.

The first barrier to expressing injustices to others seemed to be a fear of repercussions. Interviewees experienced that many of their neighbours, who are also migrants with a low socio-economic status, feared to express themselves openly to anyone outside their private circles. They expected to be punished by the municipality and housing corporations for articulating critique. Even though such a situation would be unlawful, they perceived it possible to become the victims of unequal power relations.

The second and most common barrier to expression was the language barrier. Many of the migrants in Moerwijk speak little to no Dutch, which is the officially mandated language of government communications. This prevented interviewees from learning about their rights in the heat transition as Dutch citizens (which would have aided them in experiencing injustices). In addition, their inability to converse in the required language meant they were deprived of the necessary concepts to express

their injustices in Dutch. As a result, their experiences remained mostly unarticulated to policymakers, and therefore hidden.

Collective action

Among migrants in Moerwijk, there is little to no collective action addressing the injustices. This is mainly because interviewees hesitated to share their injustice experiences with their neighbours. Heat transition projects affected entire buildings or streets simultaneously and neighbours often rented from the same housing corporations and as such, interviewees were often subjected to the same injustices as their neighbours. Still, there was little communication between neighbours, for several reasons.

First, language barriers and discrimination led to low levels of social cohesion in Moerwijk. Interviewees said that *"we do try to speak with several neighbours"*. However, especially when trying to connect with their Dutch neighbours, they found that *"our level of Dutch is not high enough"*. Some interviewees also experienced a negative attitude of neighbours towards people with a different cultural background: *"Because it [the atmosphere in the building] is so racist, I do not really get involved."* As a result, interviewees had *"basically no contact"* with their neighbours. Instead, they relied on their friends and family for support, who might not experience the same injustices, but often did encounter similar obstacles to enacting social change.

Next to that, low levels of cohesion were also due to frustrations among neighbours. On the one hand, the renovations brought neighbours closer together, as *"we were all in the same boat"*. On the other hand, they experienced that *"everyone received a different treatment"*. This led to some frustrations towards their neighbours, especially when interviewees found out that *"those who can speak up, who are Dutch, speak well, they get everything they need"*. Relations of distrust and resentment towards neighbours prevented collective action.

6.4.2. Underground Gas Storage Grijpskerk and Norg

In Grijpskerk and Norg, citizens are mainly concerned with the damage that might result from the underground gas storage, and the changing, inconsistent, and burdensome compensation measures (Van Uffelen, 2024 – see also Chapter 3). The participants were able to experience and express several injustices and subsequently organise themselves in political action groups. However, not all citizens were willing or able to engage in collective action. Moreover, the activism of the participants who articulated injustices has yet to lead to the relevant institutions addressing the

expressed injustices. Therefore, this case study illustrates the barriers to the final four steps of the ladder, namely collective action, the uptake in public discourse, reformulating claims of injustice in a positive manner, and barriers to social change (see Table 12).

Table 12. The obstacles between injustices and social change in relation to the controversy on compensation and gas storage in Grijpskerk and Norg.

The ladder of hidden morality	Obstacles in the Grijpskerk & Norg case	Examples of quotes
Social change	• Round tables (*omgevingstafels*) • Institutionalised conception of restorative justice	*"Specifically, the omgevingstafels and the participation of citizens, I feel like it is a bit late to do this, really. Groningen has been going on for multiple years." – research institute* *"the way it is done right now where there is incidental compensation, I don't think that is enough" – government institution*
Positive reformulation	• Complexity of subsurface and institutions	*"A municipality and province often have an opinion that often makes sense. But it is hard for them to justify that." – government institution*
Uptake in public discourse	• Stereotypes attached to identity features (rural, profession, education level)	*"Then you see, on television, always again, like, those people in the North, they are a bunch of stupid farmers" – activist citizen*
Collective action	• Receiving compensation • Regional identities	*Those who become active are mostly "the ones that are victims or perceive themselves as victims" - activist citizen* *"Yes, the Groningers let things happen. (…) I think they are used to doing things alone" – activist citizen*

Collective action

Even though many inhabitants are aware of gas storage, a relatively small percentage become active in local organisations. The participants who engage in social action explain their motivation by referring to their own character, their inability to tolerate injustices done to themselves or others, and their responsibility towards their fellow villagers. Two reasons were found why many people refrain from social action.

First, according to the Province of Drenthe, people who engage in social action are "*the ones that are victims or perceive themselves as victims*". In other words, citizens who have received no or little compensation for damage often engage in social action. This also shows that citizens who have received generous compensation are less incentivised to engage in collective action.

Second, the inhabitants of the provinces Groningen and Drenthe explicitly self-describe their regional identities as "down-to-earth", "subdued" or "uncomplaining", and "self-reliant" or "autonomous". Because of its geographical remoteness from the seat of the national government in The Hague, citizens in these provinces are used to doing things autonomously, without relying on the national government for help. One participant claimed: "*Yes, the Groningers let things happen. (…) I think they are used to doing things alone, and also, historically they have been more secluded and directed towards each other*." Participants claimed the threshold to engage in protests was relatively high due to this regional identity. One participant claimed that "*this would never have happened in Rotterdam*".

Uptake in public discourse

Citizens claim that the national media almost never covers issues around the gas storage units. From the documents that participants sent, it can be drawn that the citizens' grievances have had very limited uptake in the public discourse. If there is attention for gas-related injustices in the Netherlands, it goes to the (graver) injustices related to the Groningen Field instead, thereby ignoring the grievances above UGS Grijpskerk and Norg. Moreover, citizens claim that the issue hardly ever comes up in parliament and if it does, "*they hold a debate for a few hours and then another month passes*".

The main barrier to public uptake is credibility deflation of the input of citizens. The citizens interviewed in this study are inhabitants of a rural area, and the data indicates that the credibility of their testimonials is inflated due to stereotypes attached to rural identities. The participants living near Grijpskerk and Norg – even those with much expertise in subsurface and mining – feel perceived as ignorant, irrational, or profiteers. Moreover, their grievances are often not taken seriously or are even ignored by participants from institutions in 'the West' of the Netherlands. Moreover, several participants testify that emotions and societal knowledge are less valued than scientific knowledge and thus quickly dismissed, and only when there are scientific reports on the matter, does knowledge successfully come through. For example, a participant from a research institute stated: "*It was of vital importance that we could state, scientifically, and prove, that gas storage has emotional and psychological consequences for the inhabitants. As a publication, they can consider it when reforming policies.*" In sum, stereotypes and a bias

towards experience-based knowledge lead to credibility deflation hindering public uptake of expressed injustices.

Positive reformulation

Citizens also experience barriers to reformulating their claims of injustice in a positive manner. They have become very experienced in articulating what is *unjust*, yet coherent, clear and feasible formulations of what a *just* compensation system would look like are scarce. The proposed solutions often remain very vague ("*we should talk to each other more*", "*compensations need to be more generous*"). The solutions remain general indications, yet their implications have not been thought through.

One barrier to articulating a view on restorative justice in this case seems to be a lack of knowledge. Given the complexity of institutions, decision-making procedures and science about the subsurface, it is very hard for citizens to propose clear and feasible steps towards addressing the injustices voiced.

Another barrier seems to be contradicting views on the best course of action. Some citizens argue that "*we need to copy Norway's approach to compensations*", or that "*we are entitled to some of the profits*", suggesting that compensation should happen regardless of, or before, physical damage to buildings occurs. However, citizens also often state that "*of course, compensation is not appropriate when there is no causation*", contradicting statements that stress more proactive approaches to compensation. As such, there is also normative uncertainty about the best course of action (Taebi et al., 2020).

Social Change

Above UGS Grijpskerk and Norg, the efforts of active citizen groups have not yet led to social change in which the voiced injustices are addressed.[37] The design of the compensation system has remained unchanged since the articulation of concerns. From the data, two possible causes can be deducted.

First, social change can be prevented through the exercise of power. In the gas storage case, there were two competing ideas about how to organise a compensation system (e.g., two conceptions of restorative justice). One of these ideas was institutionalised through the mission statement of the organisation that organises the compensations (the IMG, *Instituut Mijnbouwschade Groningen*) and as such, it was

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[37] There is one exception: citizens expressed that it was unfair that UGS Grijpskerk was not included in the *Legal Presumption of Proof*, as there are no relevant differences between UGS Grijpskerk and UGS Norg (the latter was already included). On 13 December 2022, it was decided that the presumption would be applicable to both UGS Grijpskerk and UGS Norg.

dominant and more powerful than the other. Citizens faced a power inequality and as a result, social change was hard to achieve.

Second, social change can be avoided through symbolic fixes, or bribes, to keep societal unrest at bay without actually addressing the injustices. In the gas storage case, the *Omgevingstafels* were created, which is a round table for dialogue between citizens, the municipalities, the Ministry of Economic Affairs, and the NAM (*Nederlandse Aardoliemaatschappij*, the company that owns UGS Grijpskerk and Norg). Almost all interviewees (except for the IMG, who organises the compensation system) expressed the hope that this consultative body would be the proper platform through which injustices can be addressed. According to their website, the first (and, at the time of writing, the only) meeting happened on November 14, 2022.[38] In the absence of any real results, these *Omgevingstafels* might be a symbolic fix, leading to the absence of real social change.

6.5. Discussion

This section constructs the ladder of hidden morality by giving an overview of the possible obstacles between each step, informed by the results of the two case studies. Because the two case studies cannot provide an exhaustive overview of all barriers between injustices and social change, the identified barriers are supplemented with insights from empirical and philosophical literature on justice, participation, and social change. The insights from theory also deepen, generalise, and contextualise the results from the case studies. Moreover, this section elaborates on the responsibilities of researchers, policymakers, the media, NGOs, and other relevant societal actors in mitigating these obstacles, and related ethical difficulties. This section culminates in the framework of hidden morality (Section 6.5.7), which features the six steps between injustices and social change and the barriers between the steps identified in the case studies and philosophical literature.

6.5.1. Experiencing injustices

The first step towards social change is experiencing an injustice. Injustices are not always experienced by actors who are subject to them. In other words, there might be moral reasons to be concerned with a situation in the world that impacts a group of

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[38] See https://www.omgevingstrajectgrijpskerknorg.nl/omgevingstafels, accessed on 18 April 2023.

actors negatively, irrespective of the experiences that they have. Two different causes can be distinguished that prevent an injustice from being experienced.

First, people can experience an unjust situation as just. There are several reasons why this might occur. For one, people might lack knowledge about rights, procedures, or facts about the world. In the case study on Moerwijk, nineteen participants were unaware they should have been informed about the (right to participate in the) heat transition. Moreover, people can have faulty moral intuitions. People's moral intuitions are fallible, which means that people often have difficulties in sensing what is right or wrong. Moral agency is a skill that can be trained (Pesch, 2020). Yet, the problem can be more persistent than incidental faults in moral intuitions. Honneth theorises that when a person's relation-to-self is severely damaged, one might not think of oneself as worthy of respect or esteem (Honneth, 1995). Consequently, an injustice can be perceived as deserved when a person does not expect to be treated better. In other words, people can get used to injustices through socialisation in an unjust system, which can incite low expectations for how one ought to be treated, which might lead to failing to notice injustices, as was the case for some participants in Moerwijk.

Second, it is impossible to experience an injustice when actors are unable to have experiences altogether. This goes for people who are literally unconscious, but also – and perhaps more relevant for energy ethics and justice – for future generations that are not yet born, and for non-humans such as plants and ecosystems. Phenomena in our world can be unjust for these groups of actors, yet injustices can remain unexperienced because these actors are currently incapable of having experiences. This point was not found in a case study but was added upon further reflection.

Because injustices are not always experienced, especially not by the most vulnerable groups in society, there is a responsibility for others – for example, researchers, the media, or interest groups – to conceptualise injustices for those who do not experience them. Here, the issue of unexperienced injustices poses a methodological problem for social science, because methods that rely on experiences of injustice – such as social acceptance approaches – do not suffice (Taebi, 2017). What remains are methods that empirically describe a state in the world – for example, anthropological observations, economic data, or modelling outcomes – followed by a judgement about justice. However, such efforts can also be interpreted as paternalistic, as an injustice is hypothesised for a specific group that is not experienced by them. As such, making injustices that are not (yet) experienced by the affected groups visible is a precarious endeavour that demands rigorous argumentation.

6.5.2. Expressing injustices

Even when injustices are experienced, there is no guarantee that they are actually expressed. In other words, not all actors are able to articulate a felt injustice. In such cases, people experience injustices as moral emotions, such as anger, disappointment, hurt, and frustration (Roeser, 2017), yet they are unable to shape these emotions into well-articulated statements about what is unfair and why, for several reasons.

First, some experiences of injustice remain external to the world of communication due to a deprivation of language. Miranda Fricker's theory of epistemic injustice is the most advanced theory on this phenomenon. *Epistemic injustice* refers to "those forms of unfair treatment that relate to issues of knowledge, understanding, and participation in communicative practices" (James Kidd et al., 2017). Fricker distinguishes between two forms of epistemic injustice, namely *testimonial* (see Section 6.5.4) and *hermeneutical* injustice. The latter is of relevance here as it occurs "when a gap in collective interpretive resources puts someone at an unfair disadvantage when it comes to making sense of their social experiences" (Fricker, 2007). In other words, people can have insufficient conceptual tools to properly comprehend and subsequently express their own experiences. People experience an injustice, yet they are unable to make sense of it because the right words are not yet available (to them), or because some words (still) carry undesirable meanings (Fricker, 2007). As a result, the experiences of injustice remain ill-understood, by the subjects themselves and by society at large. Especially the most vulnerable groups in society are prone to hermeneutical injustices, as collective interpretations are "unduly influenced by more hermeneutically powerful groups" (Fricker, 2007).[39] In the Moerwijk case, participants were not proficient in Dutch and as such, they were struggling or fully unable to verbalise their frustrations or characterise their own situation as energy poverty. In conclusion, injustices can remain hidden if the right words with the right meanings are not available to people subjected to injustice at a specific moment in time.

Second, relations of power, dominance, and suppression can prevent the expression of injustices. This can be done by explicit threats of negative consequences when an injustice is expressed, yet most power mechanisms are much more subtle. Injustices are inextricably intertwined with power relations, creating and sustaining unfair patterns of advantage (Powers & Faden, 2019). This also goes for energy

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[39] Fricker gives the example of women experiencing sexual harassment or post-natal depression in a time in which those words did not yet exist. Moreover, she gives the example of a homosexual person in the 1950s who does not identify as such due to the negative meanings that were attached to the word.

systems, as people are dependent "on a complex socio-technical energy system, characterised by inequalities of power" which includes governments, energy suppliers, and landlords (Groves et al., 2021). When such relations of dependence become harmful, they might prevent a subject from expressing an injustice (e.g., staying silent because of a fear of repercussions such as being evicted from your house, as expressed by participants in Moerwijk).

Third, cultural norms and social pressure can prevent things from being said. Examples of such mechanisms are taboos, stigmas, and shame. A taboo represents a strong or even "sacred" moral norm that should not be violated (Tetlock, 2003). Several authors have shown how the existence of taboos prevents concerns of justice from surfacing (Colvin & Przybyszewski, 2022; Mattioli, 2016). For example, stigmas and shame related to energy poverty can prevent people from expressing injustices (Garthwaite, 2015; Middlemiss et al., 2019; Shildrick & MacDonald, 2013). People who are ashamed of their energy-poor situation are inclined to hide their situation, avoid inviting guests in the winter or seek help (Bredvold & Inderberg, 2022; Rincón-Rubio & Cedano-Villavicencio, 2023), as was the case in Moerwijk. Such cultural norms entail a serious challenge for the social sciences, as participants might not be entirely honest about their experiences of injustice.

Fourth, actors can be unable to articulate injustices in language due to their cognitive or physical disabilities. Not all people can speak or communicate as typically developed communicators (neurotypical). For these groups, various Augmentative and Alternative Communication (AAC) technologies are often available through which injustices can be articulated. However, not every person has access to these technologies. Moreover, conveying emotions or individuality via text or a monotone computer-generated voice is difficult. Lastly, speech is not everyone's preferred way of communication (van Grunsven & Roeser, 2022). This also affects most non-human animals, unable to communicate in ways that humans (try to) understand. To conclude, injustices might remain hidden due to the inability to convey injustices in spoken or written language, or the unease to do so.

Experienced yet unexpressed injustices pose an important problem for energy justice scholars. Like the problem of inexperienced injustices, people treated unjustly must rely on others to articulate injustices for them. When groups of people with moral emotions have trouble articulating an injustice, can anyone step in, or does that have to be someone who has (had) similar experiences? For example, is it possible for a white scholar to articulate injustices experienced by people of colour? On the one hand, it can be argued that only those who experience the harm can fully and correctly

articulate it (Birhane, 2021). Fricker suggests that subjects of injustice should find their own way and words to express their moral emotions (Fricker, 2007). On the other hand, understanding and articulating injustices experienced by others might be hard, but perhaps not impossible, for a virtuous listener (Fricker, 2007). In any case, it is important to be aware of the danger of misinterpretations when making injustices visible at this stage.

6.5.3. Collective action

Once individuals experience and express injustices, it is vital to find others who experience and express similar grievances. Finding others empowers individuals to collectively organise themselves, in other words, to form a group and engage in activism through protests, resistance, or other means. However, there are obstacles that prevent individuals from finding others, forming groups, and engaging in collective action.

First, certain policies can prevent people from sharing their experiences of injustice. For example, compensating (some) individuals for harm can prevent collective organisations from addressing the root causes of the injustice from emerging, as was the case in Grijpskerk and Norg. Alternatively, some policies can result in individuals becoming (physically) isolated, which prevents them from sharing their experiences of injustice. Honneth describes processes of "institutionalised individualisation" or the "administratively ordered destruction of neighbourhood living environment" such as public gardens or parks, communal living spaces in neighbourhoods, or shared canteens at work (Honneth, 1982). By individualising and separating the experiences of social living, opportunities to exchange grievances are minimised. Insights from sociology and energy scholars confirm these hypotheses: having a social network is one of the main predictors of non-institutional political participation (Campbell, 2013; Larson et al., 2019). Middlemiss et al. show that the absence of good social relations can lead to energy poverty, and that energy poverty leads to the absence of good social relations (Middlemiss et al., 2019). This cyclical movement makes it likely that the injustice of energy poverty of isolated individuals remains hidden.

Second, the formation of collective action groups can be hindered by a lack of resources, including money, space, and time, or a missing legal or institutional framework, rendering collective action illegal. Engaging in collective action requires sacrifices from individual members, and thus activism can be seen as a privilege, as not every individual has the means to do so. These sacrifices are especially significant

when activism is illegal, as is the case for civil disobedience, or struggles for justice in non-democratic regimes. When the costs of collective action become too high, resistance is mostly reserved for the privileged, white, rich, cis-gendered citizens.

Collective action is an important stage in the detection of injustices, and the responsibility for its facilitation is shared amongst policymakers, the media, businesses, social organisations, and individuals. In this, decision-makers have a vast responsibility to facilitate collective action and minimise its cost.

6.5.4. Uptake in public discourse

Once a group of people manages to collectively organise themselves to address a certain injustice, there is no guarantee that their grievances will be taken up and taken seriously in the public discourse. The uptake of injustice claims in public debate can mean many things, from exposure of the issue on news and media platforms to setting the agenda in parliament. Moreover, a true uptake in public discourse implies that the issue and its campaigners are also taken seriously.

Apart from mere luck, various obstacles prevent injustices from becoming recognised and part of the public discourse, and they can be placed under the header of *testimonial injustice*. This second category of epistemic injustice refers to systematically assigning a "credibility deficit owing to an identity prejudice in the hearer" (Fricker, 2007). When we listen to others, we assign credibility levels to what is being said. However, there are numerous false assumptions and stereotypes attached to identity components, such as gender, skin colour, emotional reasoning, accents, professions, rurality, or non-perfect language use. We speak of testimonial injustice when a testimony's credibility is reduced due to such prejudices, leading to people's testimonials being ignored, delegitimised, or deemed irrelevant or wrong (Fricker, 2007).

Credibility deficits can occur due to prejudices concerning language use and communication style. Defending claims of injustice in a debate, in the media, or in official political settings requires intricate cognitive and analytical skills, such as formulating valid arguments (e.g., avoiding and noticing fallacies), distinguishing between main and secondary issues, and listening and responding to the arguments of others. Moreover, actors ought to be proficient in the language of the public discourse. These abilities are more prevalent amongst highly educated citizens, which implies they are more likely to influence the public discourse. Alternatively, activists who have less analytical skills, are less proficient in the relevant language and tend to express injustices in a more emotional manner are taken less seriously in the public debate.

Often, claimants of energy injustices are only taken seriously if they frame their arguments in a scientific or economic way; the same message in a more emotional frame is not perceived as credible (Chilvers and Kearnes, 2015; Jasper, 1998; Rasch and Köhne, 2017), as occurred in the gas storage case. Moreover, in Grijpskerk and Norg, credibility deflation occurred due to the professions and rurality of participants. As such, actors in power, such as the media, social organisations, and politicians, have the responsibility to be virtuous listeners.

6.5.5.   Positive reformulation

Protestors often express injustices in a reactive and negative way, fuelled by emotions such as anger and blame. However, there is "suspicion of irrationality surrounding most emotions", preventing the underlying injustices from being noticed (Jasper, 1998). In other words, positive reformulation contributes to the likelihood of the injustice becoming visible and taken seriously by decision-makers (see Section 5.4). Moreover, and more fundamentally, stating that something is unjust is in itself insufficient for guiding policymaking and social change. To fix an injustice, an action has to be taken, for example, inventing, abolishing, or amending a policy. So, negative formulations such as "X is unjust" *must* at some point be translated into positive statements such as "to eliminate injustice X, Y should be done". In other words, injustices must be reformulated into a prescriptive normative statement for social change to occur. Grievances that are not positively reformulated go 'undetected' as they, in themselves, cannot become policies. Therefore, the step of positive reformulation is crucial. Moreover, according to Honneth, mostly the 'higher social strata' seem to possess the capacity to reformulate their concerns positively, which systematically disadvantages 'lower social strata' whose negative expressions rarely result in concrete policy change (Honneth, 1982).

However, translating injustices into feasible to-do's is no easy endeavour. There seems to be an asymmetry between positively and negatively formulated ethical statements, as "the negative terms are more definite, categorical, and fundamental than the positive" (Fjelland, 2016). As a result, it is easier to formulate that something is bad or unjust, such as *you shall not kill*, and harder to find a positive formulation about how we *should* be living together. Two elements contribute to this difficulty.

First, suggesting feasible courses of action that mitigate the injustice assumes fine-grained (scientific) knowledge of how institutions work, what actors have which power, and what is feasible given the current socio-political-economic circumstances. Honneth suggested that different social strata have different resources for translating

grievances into positive conceptions of justice, resulting in a disadvantage towards achieving social change (Honneth, 1982).

Second, there might be normative uncertainty about what the best course of action is due to epistemic disagreements, competing interests, or divergent moral intuitions (Taebi et al., 2020). Activist groups are often heterogeneous and may host competing conceptions of justice. So, once a group of citizens manages to organise themselves around one or multiple injustices, there is no guarantee of a consensus about the best course of action.

Given these two obstacles, some actors may not be able to do this reformulation, and thus other societal actors, including researchers, policymakers, NGOs, and the media, should play a supporting role. However, the methodological challenge is significant. Translating injustices into positively formulated proposals for action, such as inventing or amending a policy, is possible because claims of injustice contain implicit moral standards (Honneth, 1982; Roeser & Pesch, 2016). By claiming that something is unjust, an assumption is made about *why* something is unjust. From this (often implicit) criterion, a more positive idea about justice can be derived. For example, one can identify possible interventions by defining the injustice of energy poverty as a loss of certain capabilities (Day et al., 2016b). Grasping implicit normative standards in claims of injustice requires interpretation, which should be done with utmost precision.

6.5.6.   Social change

Even if all the steps described in the sections above are achieved – in other words, when an injustice is experienced, expressed, organised, taken seriously, and reformulated positively – the injustice might persist due to the absence of social change. Social change that addresses an injustice can manifest in multiple forms, such as new or altered policies or laws, a change in the design of an energy technology or system, or compensation for duped individuals or communities. Yet, several things can hinder social change, allowing the injustice to persist.

First, a symbolic fix to the problem can distract from the need to fully eliminate the root cause of the injustice. Two symbolic solutions are prevalent regarding energy injustices, namely apologising and providing compensation. Apologising for an injustice is often a necessary component of moral repair, as it entails an acknowledgement of the wrongdoing. Yet, in some cases, it might be insufficient as they offer a mere symbolic but not a real or material solution to the problem. In this respect, apologising has been characterised as a "politics of distraction" that can

sometimes result in an "excuse for inaction" (Corntassel & Holder, 2008). Providing compensation is a more substantial solution to an injustice, yet in some cases, it can be questioned whether compensation amounts to bribery (Hannis & Rawles, 2013). (Economic) compensation can be considered inappropriate, or even insulting and thus worsening the injustice, depending on the nature of the inflicted harm (Mansfield et al., 2002; Saglie et al., 2020; van den Berg & Tempels, 2022). In the case of Grijpskerk and Norg, providing limited compensation reduced the pressure for social change.

A second mechanism is more straightforward: claims of injustice are seriously considered but dismissed. This occurs when individuals or groups with decision-making power prefer to retain the status quo due to conflicting interests. The dismissal of concerns can also be caused by competing conceptions of justice, or – in other words – competing ideas about which laws and policies should be in place. In this case, the institutionalised laws and policies clash with the protesters' proposals, and this power inequality makes social change unlikely (see Chapter 3).

As a last remark, social change should be seen as a continuum, varying from a full victory for the grievant, including the elimination of the roots of the injustice and the compensation of the harmed parties, to dismissal and an unchanged status quo. Some mitigation measures only represent partial social change, such as apologies or limited compensation.

6.5.7. The ladder of hidden morality

Figure 5 presents the hidden morality framework. Between each step, obstacles can arise that prevent an injustice from going "up the ladder".[40] The list of obstacles is likely not exhaustive and can be supplemented by additional insights from empirical and philosophical research.

Empirically speaking, each step often presupposes the previous stages and as such, they are rough prerequisites. For example, it is hardly possible to engage in collective action without articulating an injustice first. However, the framework is not meant to be a universally true representation of how the empirical world works. The steps are not strict prerequisites for the next steps, as exceptions can be imagined: some steps might be skipped, or the order might be switched. For example, an individual might

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[40] This ladder should not be confused with Arnstein's ladder of participation. Arnstein's ladder of participation means to distinguish levels of participation, while the ladder of hidden morality distinguishes the steps from injustice to social change. As such, both the content and the function of both ladders are different.

be able to influence the public discourse without a collective organisation. Moreover, the necessary concepts for expressing an injustice can sometimes only be found in collective conversations about individual experiences. Therefore, the framework is meant to be a model or conceptual tool to help understand why injustices might remain hidden in the empirical world, which informs possible ways to overcome these obstacles and increase participation in energy decision-making, leading to more just energy policies.

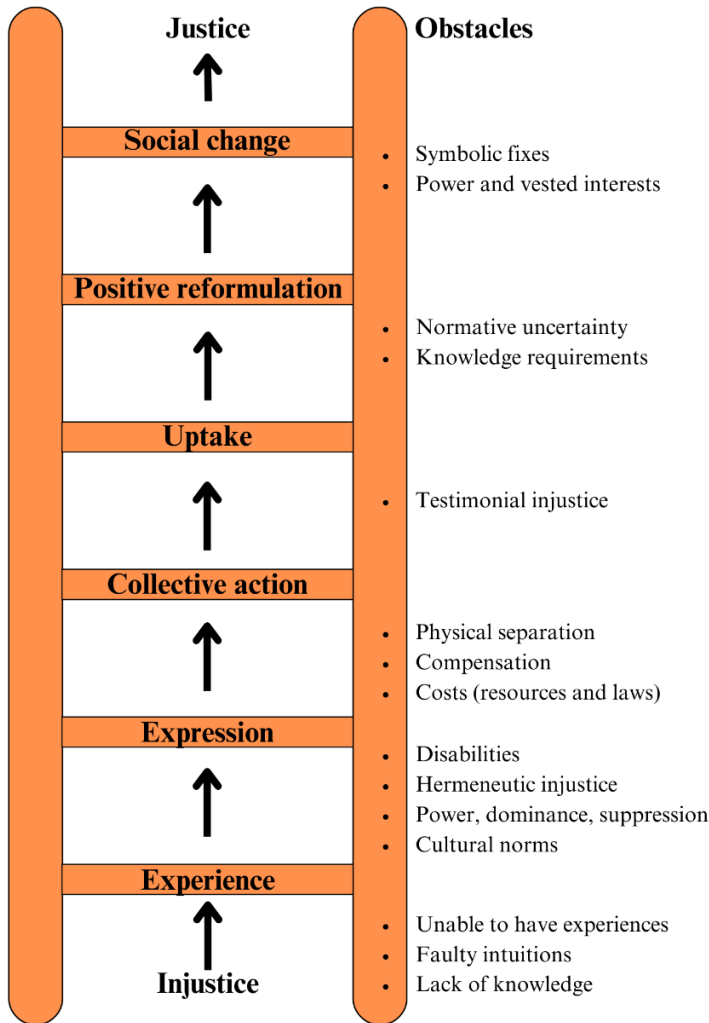| Justice	Obstacles
↑	
Social change	• Symbolic fixes • Power and vested interests
↑	
Positive reformulation	• Normative uncertainty • Knowledge requirements
↑	
Uptake	• Testimonial injustice
↑	
Collective action	• Physical separation • Compensation • Costs (resources and laws)
↑	
Expression	• Disabilities • Hermeneutic injustice • Power, dominance, suppression • Cultural norms
↑	
Experience	• Unable to have experiences • Faulty intuitions
↑	• Lack of knowledge
Injustice	

Figure 5. The hidden morality framework, portraying the steps between the injustice and social change addressing that injustice, and the barriers that can occur between each step.

6.6. Conclusion and policy implications

Policymakers are increasingly confronted with the demand for a just energy transition. To respond to this demand, policymakers detect, anticipate and mitigate unjust consequences of energy policies, technologies and systems. The aim of this chapter was to propose a framework to detect energy injustices by exploring the mechanisms that might hide them. This framework was constructed through the qualitative thematic analysis of two case studies in the Netherlands, supplemented by political philosophy and energy justice literature. The framework maps why perceived injustices might remain hidden and unaddressed, and as such it can act as a lens for detecting injustices in a more systematic manner. Moreover, it can inspire research methodologies, as injustices that remain 'stuck' on different levels of the ladder take on different forms and, therefore, require different techniques to uncover. Insights into the barriers that prevent injustices from surfacing are vital to facilitate a smooth and just transition.

The insights in this chapter have implications for different societal actors, such as policymakers, the media, NGOs, researchers, community groups, businesses, engineers and designers. Given the scope of this chapter, the remainder of this section focuses on the implications for policymakers and recommendations for further research.

The main takeaway is that not all injustices surface during participation events or in protests. This means that a policy is not necessarily just if it does not meet resistance. As a result, we cannot rely on protests and citizen participation to detect all energy injustices, especially because such methods are prone to exclude the most vulnerable participants from exploring and expressing injustices. Organising a just energy transition requires a more proactive approach to participation. In this, policymakers can deploy methods developed in academia that are able to give a 'voice' to otherwise silent citizens, such as PVE (Participatory Value Evaluation) (Mouter et al., 2019, 2021) or Q-methodology (Rodhouse et al., 2021; for an attempt to translate moral emotions about energy transition technologies into positively formulated statements via Q-methodology, see Ruiter, 2023).

Second, the framework can act as a tool for (municipal) governments to avoid the creation of barriers that prevent injustices from surfacing, or to be sensitive to these mechanisms when they cannot (easily) be removed. For example, when language is a barrier, municipal policymakers are recommended to enable the expression of concerns in multiple languages. This can be interpreted literally, as not all citizens speak the language in which a country communicates. Yet, art can also be seen as an

alternative 'language' through which people can articulate their concerns or visions of the future in which they (do not) want to live (e.g., Bendor et al., 2017). Moreover, it is important for government officials to be aware of mechanisms such as cultural norms and fear of repercussions that prevent people from sharing (truthfully) their grievances. The problem of hidden morality has no one-size-fits-all solution, but instead necessitates a careful consideration of who encounters obstacles, what they are, how they interact with other steps on the ladder, and what can be done to remove them.

Third, it is important to train government officials in developing virtues of epistemic justice. Fricker describes how epistemic injustices can be mitigated when the listeners possess certain virtues. On the one hand, the *virtue of hermeneutic justice* entails that the hearer realises that the person who struggles with formulating emotions into words and phrases might deal with a hermeneutic gap. The person might lack certain concepts, words or meanings to express the felt injustice. As such, the listener must 'listen through' the struggles, which requires certain amounts of reflexivity and awareness of the possibility of hermeneutic injustice. The *virtue of testimonial justice*, on the other hand, demands that the listener resists the tendency to deflate credibility based on these standards and judge the credibility of the speaker based on valid criteria.

Lastly, contestation is not intrinsically problematic or something that needs to be avoided and constrained (Cuppen et al., 2019; Pesch et al., 2017). Aiming to reduce social contestation, for example, through providing compensations or formulating apologies, can distract from real injustices. On the contrary, conflict can be constructive when tackling the just energy transition challenge. Through collective action, injustices can surface that need addressing. Therefore, it is important to give activists the space and resources to address their grievances. Also, taking their (often negatively formulated) concerns implies a humble attitude from policymakers. The (proposed or current) energy policies might not be the one and only best solution and as such, there is something to learn from engaging with these activist groups.

This study has limitations that inspire avenues for future research. Given its roots in two Dutch case studies, the hidden morality framework does not present an exhaustive list of steps and mechanisms. As such, future research can be dedicated to expanding the hidden morality framework. For instance, more case studies and other bodies of literature can shed light on other mechanisms that contribute to hiding injustices. In this, there is a need for case studies from the Global South and different social and political systems with varying levels of civic freedom, such as nondemocratic

regimes, as it is likely that barriers that hinder the detection of injustices vary over different political contexts. Moreover, it might be fruitful to study hidden morality in relation to different levels of political trust, as this might provide additional insights into the barriers that hide injustices. Lastly, it would be fruitful to explore *structural hidden morality*. We hypothesise that especially the most vulnerable people - in terms of race, education, and gender – encounter persistent obstacles at different steps of the ladder. As such, we expect that there are structural patterns of disadvantage at play, meaning that some people are more likely to climb the ladder than others. Empirical research adopting an intersectional approach can lay bare these structural mechanisms at play.

7. Conclusions

Because renewable energy sources such as wind and solar are intermittent, the energy transition necessitates tremendous energy storage capacities. This brings about not only technological challenges but also social and ethical questions, including questions of justice. To design and govern energy storage systems in a 'just' way, it is crucial to conceptualise energy justice in a way applicable to energy storage design and governance. However, justice is characterised by normative uncertainties; in other words, there is moral plurality, both in theory and in society, about what is (un)just in specific contexts. Existing energy justice frameworks fail to acknowledge normative uncertainties and thus offer insufficient resources to apply energy justice to energy storage, in other words, to prescribe 'the best course of action' for design and policymakers (normative challenge). Moreover, existing frameworks offer little resources to understand conflicts around energy storage infrastructures in which competing conceptions of justice clash (descriptive challenge). Therefore, this dissertation aimed to reconceptualise energy justice in light of normative uncertainties.
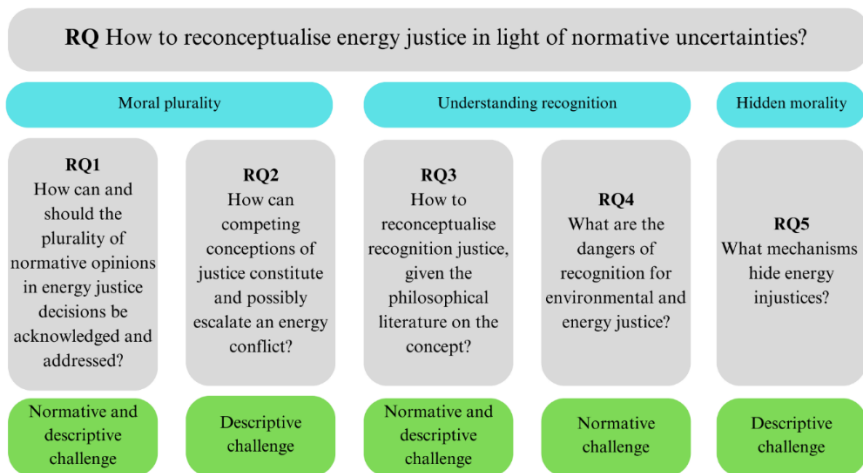

Figure 6. A schematic overview of the main research questions and the subquestions in this dissertation.

As figure 6 shows, Chapters 2 and 3 focused on revisiting existing energy justice frameworks in the face of moral plurality; Chapters 4 and 5 zoomed in on 'recognition justice', a crucial yet misunderstood concept within energy justice; and Chapter 6 conceptualises hidden morality. Building on the conclusions from these chapters

(Sections 7.1-7.5), I will answer the main research question in Section 7.6: *How to reconceptualise energy justice in light of normative uncertainties?* Because the aim of this dissertation is conceptual, the dissertation has engaged to a limited extent with energy storage technologies. Hence, I end this chapter with some limitations (Section 7.7) and avenues for further research, including applying the developed conceptualisations to energy storage technologies as sociotechnical systems (Section 7.8).

7.1. RQ1: How can the plurality of normative opinions in energy justice decisions be acknowledged and addressed?

This chapter assesses existing energy justice frameworks in light of moral plurality. The literature review on normativity in energy justice in Chapter 2 showed that scholars frequently formulate normative statements, such as 'X is unjust' or policy and design recommendations, based on the energy justice tenet framework. However, the framework is in itself insufficient to substantiate normative conclusions. Energy justice and its tenets are often interpreted as *concepts* that have one clear meaning, pointing towards specific policy and design options. However, there is a plurality of *conceptions* of (each tenet of) justice. More specifically, there is normative uncertainty about the most appropriate principle, scale, subject, and timeframe of justice, and the body of knowledge that should be assumed when making normative claims. From this chapter, it can be concluded that normative uncertainties on energy justice are often overlooked. Moral plurality can be acknowledged and addressed through a revisited energy justice framework that distinguishes not only tenets of justice, but also the dimensions about which there can be normative uncertainty.

The revisited energy justice framework can be used as a conceptual and analytical tool to achieve descriptive aims, in two ways. First, the framework can be used to make explicit and analyse the implicit normative ideas within and behind energy technologies and innovations. Second, the tenets and dimensions form a heuristic tool to analyse energy conflicts and controversies. Different stakeholders may assume different ideas of justice, and the revisited framework can help identify the core of a conflict. As such, the framework meets the descriptive challenge and aids the descriptive, explanatory aim of energy justice scholarship.

The revisited framework cannot in itself be used as a decision-making tool, because the framework itself does not prescribe what to do, or what conceptions of justice to prefer, as that would again deny normative uncertainty. As such, this framework alone cannot meet energy justice's normative aims. Still, the framework provides a first step towards tackling the normative challenge. This is because the framework can be used

as a heuristic to uncover the hidden normative assumptions in energy technologies, policies, or one's own judgements. This way, the framework can be used as a reflection tool for researchers, policymakers, and designers. Considering the different tenets and dimensions invites agents to reflect on their own normative assumptions. What scale of justice do I have in mind when I draft this policy? Am I designing for humans or multiple species? When concluding that this practice is unjust, what principle of justice do I assume? Awareness of normative assumptions is a necessary first step towards critical reflection.

To justify normative conclusions on energy justice, it is crucial to make explicit one's normative assumptions, which are principles or theories of justice. As such, tackling the normative challenge requires a close collaboration between political philosophy and the social sciences.

7.2. RQ2: How can competing conceptions of justice constitute and possibly escalate an energy controversy?

Moral plurality can give rise to conflicts around energy infrastructures, and energy justice frameworks can be leveraged to understand such conflicts. Chapter 3 focused on the descriptive challenge of energy justice and, more specifically, on understanding a conflict on energy storage. A case study on underground gas storage in the Netherlands showed that the existing energy justice tenet framework is insufficient to understand the core of the conflict. Instead, the energy controversy in Grijpskerk and Norg was constituted by two competing conceptions of restorative justice, namely, a reactive and a proactive conception. In this, the reactive conception entails compensation only for causally inflicted harms, while the proactive consumption includes additional criteria for just restoration, including stability, equality, and well-being, and also prescribes compensating individual households for risks and fears of harm. This chapter thus shows the importance of distinguishing *concepts* of justice – such as distributive, procedural, recognition, and restorative justice – and *conceptions* of justice, which are specific perspectives on justice that contain normative assumptions about the principles, scale, time, and subjects of justice. This distinction is a crucial addition to energy justice scholars' conceptual and analytical toolkit, as it allows for a more nuanced analysis of energy conflicts.

Although gas storage is often considered crucial for the energy transition in the near future, other storage technologies, such as hydrogen or batteries, are quickly gaining importance. This case study showed that energy storage can give rise to social conflicts in which justice claims play a crucial role. Two lessons can be drawn from

this case study on gas storage for developing and implementing future energy storage infrastructures and projects. First, energy storage systems are not morally neutral; instead, there are normative assumptions institutionalised in energy storage technologies and related policies. For example, the reactive conception of restorative justice was institutionalised in the procedures of the IMG. Making explicit institutionalised normative assumptions is the first step towards critical reflection and emancipation, in other words, to achieving energy justice's normative aim.

Second, the case shows that perceiving energy storage systems as 'neutral' quickly renders the claims of protesting citizens illegitimate, which may lead to anger and conflict escalation. In the UGS Grijpskerk and Norg case, the reactive conception of restorative justice was institutionalised and seen as legitimate, while the proactive conception was not. As a result, claims of injustice that follow from the non-institutionalised conception were seen as irrational or opportunistic, and people who voiced these grievances experienced misrecognition. Moreover, due to the nature of the reactive conception, the debate was reduced to an epistemic conflict on whether gas storage causes damage to buildings or not, which adds to the perception that citizens' grievances are irrational. This is unfortunate because social protests can flag institutionalised assumptions that are (no longer) just. Future energy storage projects should thus avoid reducing energy justice conflicts to epistemic disagreements in which laypeople are wrong and experts are neutral and right.

7.3. RQ3: How to reconceptualise recognition justice, given the philosophical literature on the concept?

Within energy justice frameworks, the concept of 'recognition justice' is often adopted to achieve both normative and descriptive aims. This effort aligns with recent critiques of traditional political philosophy's tendency to reduce social justice to distributive justice (Fraser & Honneth, 2003; Young, 1990). Iris Marion Young noted that "political theory focuses on distributive justice, not the unconscious gestures, informal remarks, judgements of ugliness, feelings of discomfort - they are not seen as injustices" (Young, 1990, p. 149). As a result, the distributive paradigm risks "ignoring or even excusing some of the most important sources of oppression" (Young, 1990). If energy systems are seen as simply distributing burdens and benefits, it is easily forgotten that they are the product of social relations. The concept of recognition as proposed by Taylor (Taylor, 1996) and Honneth (Honneth, 1995) incorporates this relational view on justice, and many other scholars – including Nancy Fraser – set out to refine the concept further.

However, the literature review in Chapter 4 showed that energy justice scholars define and interpret the concept of 'recognition justice' in different ways, with little reference to the origins of the concept and to Honneth's work. Moreover, Fraser's notion of 'participatory parity' is often misinterpreted, which has led to confusion between the recognition and procedural justice tenets. Taking into account philosophical literature on justice as recognition, it can be concluded that the concept in energy justice ought to be revisited: recognition justice is concerned with the adequate recognition of all actors through love, law, and status order.

On the one hand, this definition is helpful for reaching energy justice's descriptive aims.

The typology of love, law, and status order implies that there are different kinds of experiences of misrecognition. The typology supplements the conceptual and analytical toolkit that energy justice scholars can leverage to analyse experiences of injustice, or energy conflicts. On the other hand, the principles of an undistorted-relation-to-self and participatory parity can be used as normative premises to justify normative conclusions. As such, revisiting the theories of Honneth and Fraser also helps strengthen energy justice scholarship in achieving its normative aims.

7.4. RQ4: What are the dangers of recognition for environmental and energy justice?

Chapter 5 deepens the understanding of recognition in relation to energy and environmental justice. Although recognition is conceived by Fraser and Honneth as inherently good, recognition should be seen as an ambivalent phenomenon. Chapter 5 illustrated that people's struggles for recognition, and the granting thereof, do not always contribute to justice. To be specific, recognition can reproduce unjust social norms and identities, cause polarisation in society, lead to domination, or cause category mistakes. This chapter concludes that legitimate struggles for recognition can be emancipatory when they question and critique unjust structures. On the other hand, struggles may be legitimate yet still cause or reproduce injustices. As such, struggles for recognition should not be analysed or evaluated in isolation from the social norms and structures that underlie desires for recognition.

These conclusions provide a crucial nuance to the normative challenge of energy justice. To repeat, the normative challenge implies uncertainty about what is (un)just and what course of action to prescribe. Recognition as an ambivalent phenomenon warns against equating environmental justice movements' demands with moral progress, even if their grievances might be legitimate. Instead, demands by social

justice movements should be evaluated together with the implicit assumptions and norms they represent.

Conceiving recognition as ambivalent also adds a level of depth to the analysis of grievances, advancing the descriptive aim of energy justice. Environmental and energy justice movements often try to speak the institutions' language in order to gain recognition, obscuring what the movements actually want and need. Moreover, although claims of injustice may be framed as misrecognition, grievances may actually be the result of unjust distributions, social norms, or identities that the social movement does not address explicitly and, as a result, remain hidden. Both elements should be taken into account when doing descriptive energy justice research.

7.5. RQ5: What mechanisms hide energy injustices?

Both the descriptive and normative aims of energy justice scholars depend on detecting claims of injustice. As such, examining why injustices can remain undetected is crucial, which Axel Honneth identified as the problem of *hidden morality*. In Chapter 6, philosophical texts and two case studies result in the construction of a ladder that contains the steps between 'injustice' and 'social change', i.e., addressing energy injustices and fostering a just energy transition, and the obstacles between the steps. Obstacles vary from the internalisation of unjust social norms and expectations, cultural injustices, the lack of resources, space and time, epistemic and normative uncertainties, power relations, and symbolic fixes. These obstacles prevent injustices from being experienced, voiced, heard, taken up, and mitigated.

The ladder of hidden morality contributes to the descriptive aim of energy justice, as it is a conceptual tool that helps situate experiences of injustice beyond the explicit articulation of grievances by social movements. Current energy justice frameworks analyse the *content* of grievances, yet this ladder focuses on their level of *dissemination* in society. However, both the content and the dissemination of grievances are important in accurately describing energy justice grievances and conflicts.

The ladder of hidden morality does not provide insight into what is just, or what claims of injustice are justified. As such, the ladder does not provide 'solutions' to normative uncertainty about energy justice. However, the framework links the content of claims of injustice to mechanisms in society that can also be unjust, such as unjust social norms and expectations that are internalised, biases and stereotypes, or power inequalities. As such, it broadens the scope of the normative challenge in a similar way to the analysis of the ambivalence of recognition. Moreover, although *claims* of

injustice cannot be equated with actual injustices, they often signal societal wrongs. The hidden morality framework stresses the need for more proactive participation in energy decision-making beyond studying articulated concerns by invited and uninvited publics. Doing so may result in the detection of more claims of injustice that can be analysed and weighed, contributing to more just energy systems.

7.6. RQ: How to reconceptualise energy justice in light of normative uncertainties?

By bridging political philosophy and energy social science research, this dissertation reconceptualised energy justice in light of normative uncertainties, strengthening the energy justice scholarship's capacity to achieve its descriptive and normative aims.

On the one hand, this dissertation revisited the conceptual and analytical toolkit that energy justice scholars can use to analyse claims of injustice (descriptive aim). I have argued that both the existing principle-based and tenet-based frameworks lack explanatory power and conceptual nuance. Therefore, I proposed distinguishing between *concepts* (or tenets) of justice and *conceptions* of justice, which contain a set of normative assumptions about principles of justice, subject, scale, time, and knowledge. This revisited energy justice framework allows for a more fine-grained understanding of grievances and energy conflicts. Moreover, it is vital to avoid studying claims of injustice in isolation but to scrutinize them jointly with implicitly assumed social norms, identities, and power relations. The backdrop of social norms influences what and whose grievances are detected and which ones remain hidden. Additionally, this backdrop impacts how injustices are experienced and framed. Taking into account not only the tenets of justice but also their conceptions, their uptake in society, and the implicit social norms and identities allows for a more elaborate conceptual tool to understand claims of injustice, whether voiced by individuals or environmental and energy justice movements.

On the other hand, this dissertation provided insights into achieving the normative aims of energy justice scholarship. The normative challenge draws attention to the fact that existing energy justice frameworks are insufficiently equipped to justify normative conclusions, whether they are evaluative (i.e., X is (un)just) or prescriptive (i.e., we should do Y) in nature. This is because the tenets of justice are often unsubstantiated or 'thin' and can refer to a plurality of conceptions. To tackle this challenge, this dissertation proposes first to improve our ways of detecting experiences of injustice, as they often signal wrongs in energy systems, using the hidden morality heuristic. Second, grievances should not be taken at face value. Claims of injustice are made

against a backdrop of social norms, power structures, and identities. As such, both claims of injustice and the backdrop of social norms should be made object of critical reflection. Third, normative conclusions – whether prescriptive or evaluative – should be well-justified in a transparent manner. Valid normative conclusions are drawn based on at least one normative premise, which is either implicit or explicit. To acknowledge plurality and avoid inappropriate or biased evaluations or prescriptions, it is crucial to make one's normative assumptions explicit. Only then, it becomes possible to question and scrutinize them, in academia or in the public sphere. Such a public dialogue on energy justice is crucial because no individual, being a scholar or politician or engineer, should have the monopoly over defining energy justice.

In sum, the conceptual contribution of this dissertation is the identification of three aspects of energy justice, namely (1) the claims of injustice, (2) the mechanisms that can hide energy injustices and prevent social change, and (3) the backdrop of social norms and identities (see Figure 7). The first aspect, claims of injustice, can be analysed descriptively with the aim of understanding grievances, or normatively evaluated for their legitimacy. The second aspect, the ladder of hidden morality, helps to understand why these (experiences or claims of) injustices do or do not result in social change. Third, the backdrop of social norms and identities co-shapes both other aspects, and should not escape critical reflection.
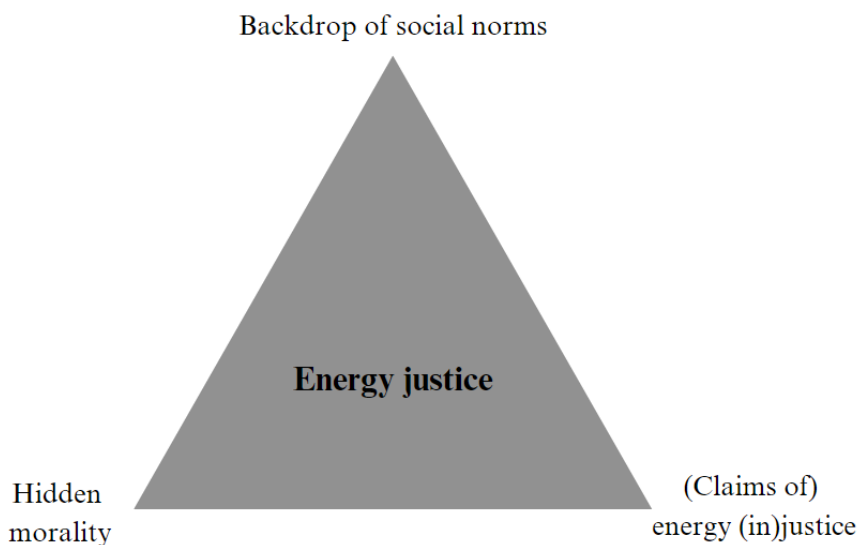

Figure 7. Visualisation of the conceptual contributions of this dissertation.

7.7. Limitations

The conclusions drawn in this dissertation are not without limitations. In some of the chapters, I have already outlined limitations specific to the adopted research methodologies and approaches. However, two limitations pertain to the dissertation in general.

First, the heuristics developed in this thesis are quite abstract and conceptual and thus may need refinement, modification, or amendments when applied to concrete cases or technologies. Therefore, the frameworks should be empirically tested for their validity and usefulness in policy and design. I consider theoretical frameworks as living instruments that can, and should, always be met with a critical gaze in further research endeavours.

The second limitation pertains to my own situatedness and cultural embeddedness. The overall aim of this research was not to discover empirical truths or to draft testable hypotheses, but to construct conceptual heuristics that are useful, as in, that help us understand, structure, analyse and apply 'justice' in energy contexts. This aim was partly achieved by analysing a local energy conflict in the north of the Netherlands. This controversy and the experiences I had during my research visit in Wales, UK, have shaped the (re)conceptualisations developed in this thesis, such as the ladder of hidden morality, the distinction between concepts and conceptions of (restorative) justice, and my interpretations of several dangers of recognition. As such, it can be assumed that case studies from different areas of the world in which access to certain commodities is less self-evident, where people have different levels of political freedoms and privilege and where different types of injustices are prominent, may further refine and perhaps rearrange the contributions of this dissertation.

7.8. A research agenda for energy justice

In this dissertation, I have stressed the importance of acknowledging that there are not only technological but also normative uncertainties involved in energy innovations. Energy systems are socially constructed and thus embody institutionalised social norms, needs, and interests that can be evaluated in terms of right and wrong. Moreover, the impact of energy systems on society can also be (un)just. Many choices that are made in the design, innovation, and deployment of energy technologies are, in essence, ethical choices, such as choices about the materials that will be used, the physical location of the technology, the power source, what (not) to invest in, and the institutional structures that are necessary to support the technology such as the

involved companies and governments. Not only the technological choices but also the normative aspects of the energy transition – i.e., energy justice – should be a topic of public and academic debate.

Existing energy justice frameworks are insufficiently able to account for normative uncertainties. This dissertation aimed to strengthen the energy justice scholarship by constructing a vocabulary for energy justice that *does justice* to normative uncertainty, and that can be applied to energy systems, technologies, and policies, including energy storage. The reconceptualised frameworks in this dissertation paved the way for future research on justice and energy systems, including energy storage, in the following ways.

First, future research can be directed at *applying* the heuristics developed in this paper to energy systems and technologies, including energy storage. Case study work can validate and refine the heuristics developed in this paper, making them more applicable in practice. The Dutch organisation *Topsector Energie* stressed the need for this type of future research and refined the revisited energy justice framework in Chapter 2 to stimulate energy justice reflections on energy projects (see Box 1). To stimulate future research, they created a tender for developing case studies and a 'conceptual instrument' (*instrumentarium*) to integrate energy justice in local and regional energy decision-making (Slob & van der Wal, 2024).

Box 1. Energy justice as a reflection tool: an example

In May 2024, *Topsector Energie* published a position paper called "Energie-rechtvaardigheid: Voor een inclusief en rechtvaardig energiesysteem" (Santoo & van Duin, 2024). Inspired by the revisited energy justice framework as developed in Chapter 2, they drafted reflection questions on the intersections of the tenets of justice and the five dimensions of normative uncertainty. These questions are meant to guide discussions on what 'energy justice' implies for specific energy policies or projects, from the perspective of energy practitioners. Examples of such questions are: "Does nature also have a voice?" in relation to *procedural justice* and *subject of justice*, and: "What regions/countries profit the most, and which ones the least?" where *distributive justice* and *scale* intersect. In the end, the evaluation of (proposed) energy policies or projects requires a discussion on what a just distribution is of burdens and benefits, whether the procedure is just, whether actors are recognised through love, law, and status order, and whether, how, for whom and for what injustices restoration should be organised. These questions are at the intersection of each tenet and the *principles of justice*. This white paper demonstrates how the energy justice framework can be leveraged as a reflection tool in energy decision-making.

Second, it is crucial to *uncover the implicit normative assumptions embedded in energy technologies and subsequently question them*. Energy systems, also those involving energy storage, are products of social relations and norms, and as such, they are not neutral but filled with normative ideas that can and should be scrutinised critically. For example, energy storage systems may be designed to support national energy independence, or to balance national profit and local impact in favour of the former, or to benefit humans rather than non-humans, all of which are normative assumptions that can be contested. The revisited energy justice framework provides a starting point for such analyses, as it highlights which questions should be asked to identify normative assumptions, such as: what principles of justice are assumed in this energy system, for whom is this technology considered 'good', and are future generations taken into account? For an example of an analysis of energy justice assumptions in the context of energy storage, see Box 2. In addition, as energy systems embody certain normative assumptions, they also always *exclude* alternative normative assumptions. Therefore, it is crucial to consider the social status of different normative assumptions. Some conceptions (such as anthropocentrism or liberalism) are institutionalised and thus more powerful, which may lead to disregarding claims of injustice based on alternative ideas of justice. Failing to acknowledge this moral plurality may lead to resistance to energy infrastructures and unproductive conflict. Future research should thus focus on what normative assumptions are institutionalised in energy systems and what competing normative assumptions may be justified. In this, it is crucial to focus on energy storage, such as electrolysers, redox flow batteries, and the systems in which such technologies are embedded, as energy storage will play a large role in future energy transitions, due to the intermittent nature of renewable energy production.

Box 2. Energy justice assumptions of energy storage experts

In November 2023, I organised four workshops with energy storage experts on their conceptions of justice (van Uffelen, forthcoming). In these workshops, I asked experts on hydrogen production and redox flow batteries about the potential 'good' and 'bad' consequences of their technology, and *why* they considered these consequences as either good or bad. The revisited energy justice framework was used to uncover and analyse implicit normative assumptions. I found that the participants had specific conceptions of justice pertaining to each dimension (time, scale, knowledge, principle, and subject of justice) that they took for granted, such as anthropocentrism, utilitarianism, and liberal nationalism. Making explicit these normative assumptions allows for critical reflection and dialogue.

Third, the ethically responsible development of energy systems, such as energy storage, not only implies a critical reflection on institutionalised normative assumptions, but also the *anticipation of injustices through deliberation with stakeholders, and appropriate responsiveness to their input* (Carbajo & Cabeza, 2018; Stilgoe et al., 2013). To start, it is important to take note of people's experiences of injustice. As injustices can remain hidden in participation, the hidden morality heuristic can be used to (re)design such processes. For example, future research can explore how unconscious biases play a role in participation procedures, or how art can contribute to detecting injustices in relation to energy storage (Fraaije et al., 2022, 2023; Roeser et al., 2018; Roeser & Steinert, 2019). Next, the revisited energy justice framework, combined with the more fine-grained understanding of recognition, provides conceptual and analytical tools to analyse and understand the claims of (in)justice that are voiced by stakeholders. Lastly, the outcomes of public deliberation should be evaluated appropriately. It is insufficient to focus on the social acceptance of stakeholders because experiences of (in)justice may be unjustified, or injustices may remain hidden (Taebi, 2017). Developing energy storage technologies is a normative endeavour that requires genuine ethical reflection and not merely aggregating individual preferences (Pesch & van Uffelen, 2024). When evaluating to what extent the stakeholders' claims of (in)justice are justified, it is important to make explicit normative assumptions and theories or principles of justice. Moreover, I have argued that conceptions of justice should be considered jointly with the backdrop of social norms and identities they reproduce, and both should be scrutinized critically.

Lastly, acknowledging normative uncertainties leaves us with many *difficult moral questions and dilemmas that demand normative research endeavours*. Future research ought to be directed at determining what just distributions are of energy and energy storage, whether and what kind of public participation is morally required in the case of energy storage infrastructure, to what extent more-than-human justice should be taken into consideration when designing energy storage solutions, or what scale of justice should be adopted when making energy storage policies in a national context. Ultimately, normative research should go beyond questions of *energy justice* and also study questions of *energy ethics*. Questions on energy ethics are, in essence, questions on the good life and how to act. Energy storage systems are institutionalised norms and ideals, and as such, it is crucial to reflect critically on society's goals and dreams and the means of achieving those. What is energy for, and what needs are really crucial to fulfil? What utopian visions of the good life underlie energy storage systems and policies, and how

to assess such ideals?[41] To what extent can it be morally justified to nudge local publics into acceptance of renewable energy infrastructure? Such a research agenda on normative energy justice and energy ethics requires interdisciplinary research and, accordingly, a collaboration between philosophers, social scientists, and energy engineers.

As a last remark, the conceptual frameworks developed in this dissertation are also *applicable beyond energy contexts*. Normative uncertainties about justice in energy contexts seem to play out similarly in different contexts, such as Artificial Intelligence, urban spatial planning, and water infrastructures, albeit in relation to different dilemmas and questions due to contextual and technological specificities. In the past decade, several scholarships have emerged that link 'justice' to these domains. Often, scholars adopt frameworks similar to the tenet-based conceptual tool that face the same descriptive and normative challenges as energy justice frameworks do. As such, the conceptual tools in this dissertation may also do justice to normative uncertainties in other applied justice scholarships.

All research data and code supporting the findings described in this thesis are available in 4TU.ResearchData at: https://doi.org/10.4121/8dcf17ae-e946-47c1-be8c-9d5d137d920c.

Epilogue: The Social Role of Philosophy

Societies nowadays face many wicked problems, such as climate change, wars, poverty, digitalisation, Artificial Intelligence, and – of course – the just energy transition. These problems are wicked because the exact nature of the problem and the best course of action are shrouded in normative and epistemic uncertainties. Different disciplines highlight different problems and solutions, and none are in themselves sufficient to solve these crises. Consequently, this dissertation is inherently interdisciplinary and bridges philosophy, the social sciences, and energy research. In this, I leveraged philosophy to strengthen energy justice researchers' conceptual frameworks. However, this works both ways and philosophy, too, can benefit from this bridge. The interdisciplinary nature of this research has brought about two main questions about the identity, role, and responsibility of philosophy in relation to the social sciences that I wish to address in this epilogue.

The first question pertains to the definition of philosophy, which is traditionally seen as an armchair discipline. Driven by wonder, the philosopher climbs the ivory tower, creating a distance between the self and the world. From this position, the philosopher engages in radical-critical reflection on the world down below. The distance between the philosopher and her object creates a certain level of alienation, which allows the philosopher to see what others do not, such as implicit assumptions, hidden paradigms, and ill-defined concepts. By stepping back, philosophers can abstract from the concrete, structure the unstructured, and bring conceptual nuance. As such, philosophers are in the business of "clarifying the meaning of concepts and issues, describing and explaining social relations, and articulating and defending ideals and principles" (Young, 1990, p. 5). From their towers, philosophers draw conclusions not only on what, how and why the world below *is*, but also on how it *should (not) be*. As such, philosophers are experts in argumentation. They study logic, deconstruct faulty reasoning, and construct valid arguments.

However, this view on what philosophy is – and, implicitly, what it should be – was often disrupted throughout writing this dissertation. Philosophy is always *about* something, such as philosophy of mind, language, or science, but to what extent should philosophers explicitly engage with data, empirical facts, and scientific findings? What is this 'radical-critical distance' exactly, and how does philosophy differ from the social sciences, which also observe society from a critical distance but with more explicit empirical methods?

Possible answers to these questions seem to be on a spectrum. On the one end, philosophers may engage in abstract, metaphysical questions, with one's experiential knowledge as the sole input (Horvath & Koch, 2021) – I shall call this approach *fundamental philosophy*. Fundamental philosophy has the potential to be radically critical, yet its conclusions may be too particular, biased, or irrelevant to the world at large. There is also *empirically informed philosophy*, in which insights from other sciences inform the philosopher, as input enters a black box that contains no formula or process that can be described in a methodology section (Bosschaert & Blok, 2023; De Boer, 2020; Hämäläinen, 2016). However, how philosophers pick out, process, and interpret data remains unclear. On the far end of the spectrum, philosophers gather and interpret data to either answer philosophical questions or inform concepts or theories in either philosophy or the (social) sciences, which is called *empirical* philosophy. Given its vicinity to the real world and its feasibility constraints, this type of philosophy perhaps diminishes the potential for more radical critique (Wolff, 2018). However, studying the real world can transform philosophical ideas (Mol, 2021), and philosophical theories can inform and strengthen the social sciences. Empirical philosophy thus builds a bridge with the social sciences that is mutually beneficial, and it is to this project that my dissertation aims to contribute.

Although all three types of philosophy are valuable in their own way, they are not given equal esteem in academia. Often, empirical philosophy is treated with disdain or scolded for not being 'real philosophy'. Empirical data is often considered worthless to answer philosophical questions about the good or the just. Institutionally, philosophers are discouraged from bridging the academic silos of philosophy and other sciences, as developing one's methodological skills and interdisciplinary knowledge eats away the time that one can spend on reading philosophy and vice versa.

However, such depreciation and academic isolation are neither real nor productive. Philosophers necessarily deal with empirical phenomena, whether this is made explicit or not, because they are embodied and socialised in concrete contexts. Moreover, normative conclusions, including critiques, always combine abstract principles and concrete empirical experiences. Thinking of the good or the just without social context is too abstract to be useful, and social contexts shape moral intuitions (Young, 1990). On the other hand, without (implicit) abstract normative principles, standards, ideals or theories, it is impossible to distinguish valid from invalid normative claims (Hamlin & Stemplowska, 2012). As a result, answering questions about justice requires both empirical investigations and radical-critical philosophical

reflection: "Philosophy may, indeed should, be responsive to human experience and yet critical of the defective thinking it sometimes contains" (M. C. Nussbaum, 2001, p. 11). In sum, empirical social science research can inspire, feed, and refine philosophical thinking. In the gas storage case, for example, the richness and specificity of the empirical gave rise to more detailed definitions of restorative justice conceptions than armchair philosophy would have allowed. Given the importance of empirical philosophy, it is crucial to create spaces within academia for empirical philosophy, both in teaching and research, and to grant it the esteem it deserves.

Second, bridging the social sciences and philosophy gave rise to questions regarding the roles and responsibilities of philosophy. Philosophers reflect critically on often-made assumptions and conceptual understandings, and their conclusions are either descriptive – as in, describing or better understanding a phenomenon and its origins – or normative. Normative conclusions can be evaluative or prescriptive: evaluative statements declare that a phenomenon is good or bad, (un)desirable, or (un)just, while prescriptive statements recommend a course of action.

Although descriptive and normative conclusions are common in philosophy, there seems to be an asymmetry between evaluative and prescriptive normative projects. It is easier to formulate critique and deconstruct societal phenomena than to prescribe a good, desirable, or just course of action for policy or design (Wolff, 2018). After all, the nature of philosophy is to maintain a critical distance, which allows for deconstructing that which others take for granted. However, should philosophers merely deconstruct assumptions and concepts, or should they also pursue more constructive endeavours? Should philosophers merely stress normative uncertainties and call for public dialogue, or should they draft bullet points, propose concrete policies, and steer towards social change?

The importance of deconstruction cannot be underestimated. Discovering that a definition or assumption does not hold is also a form of knowledge; Socrates was the first to admit that knowing you do not know is an improvement from having false knowledge. However, I consider it crucial for philosophy to move beyond its deconstructive tendency and to be more constructive in guiding policy and design. This is because philosophers have a certain expertise in argumentation, conceptualisation, and analytical thinking. Locking up this expertise in an ivory tower would deprive society of critical capacities that can help create a more just world. In this, philosophers should always stick within the limits of their expertise and be transparent about the arguments leading to the prescriptive-normative conclusions to avoid arguments from authority (Wolff, 2018).

In the face of just energy transitions and many other urgent wicked problems, philosophers cannot and should not remain in their towers. I hope this dissertation invites philosophers to participate in interdisciplinary dialogues and confront their own (normative) perspectives, paradigms and assumptions with those of other disciplines. This may be a challenge and a disruption of current (solidary) research practices, but one that is crucial to take up. The ivory tower still exists in, and because of, the world below.

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Appendix 1: An overview of existing review articles on energy justice (Chapter 2)

Title of review	Year	Journal	Main topic
Reviews that apply tenets of justice to an issue (technology/region)			
A justice and wellbeing centered framework for analysing energy poverty in the Global South	2019	Ecological Economics	"Drawing upon recent critical scholarship, I demonstrate how issues of distributive, recognition and procedural injustice are generated in the course of provisioning energy services for populations in the Global South."
Can we optimise for justice? Reviewing the inclusion of energy justice in energy system optimisation models	2023	Energy Research & Social Science	"In this paper, we review how, and to what extent, aspects of social justice have been included in energy systems optimisation modelling as well as areas for future research."
Decision-making and scalar biases in solar photovoltaics roll-out	2021	Environmental Sustainability	"The paper reviews and Synthesises emerging scholarship on solar PV roll-out, crosssectoral aspects of this multi-scalar energy transition, and energy justice."
Inequalities in access to energy in informal settlements: Towards energy justice in Gqeberha and Komani in South Africa	2023	Water-Energy Nexus	"The aim of the study on which this paper is based is to investigate the factors that contribute to the exclusion of residents in informal settlements from access to renewable energy and their implications for sustainable development in informal settlements and allowing residents full participation in the energy economy of South Africa."
Revisiting feed-in tariffs in Australia: A review	2018	Renewable and Sustainable Energy Reviews	"compiling and comparing FiTs in Australia across its states and territories for residential small scale photovoltaic installations."
When energy justice is contested: A systematic review of a decade of research on Sweden's conflicted energy landscape	2022	Energy Research & Social Science	"In this paper, we set out to map the literature on conflicts related to the energy system in Sweden using a framework of energy justice"
Where the wind blows: Exploring barriers and	2021	Energy Research & Social Science	"This study presents a comparative analysis framework exploring how

opportunities to renewable energy development on United States tribal lands			barriers to tribal wind energy development influenced two projects"
Analysing intersections of justice with energy transitions in India - A systematic literature review	2023	Energy Research & Social Science	"This study adopts a systematic approach to analyse energy transitions literature in the Indian context to identify how justice discourse interjects within this scholarship in terms of problematization and conceptualisation. In addition to exploring focus areas, methodological, geographical, and temporal trends, the study synthesises the literature to draw out major themes of enquiry. These themes are then analysed using the triumvirate lens of energy justice (distributive, recognition and procedural)."
Energy justice within, between and beyond European community energy initiatives: A review	2021	Energy Research & Social Science	"systematic literature review to explore how the notion of energy justice is discussed within scholarly work on community energy initiatives in Europe."
Six decades of nuclear fuel cycle administration in Japan: From delusional obsession to self-perpetuation	2023	Energy Research & Social Science	"This essay identifies the institutional shortcomings of Japan's nuclear fuel cycle administration"
Applying energy justice into the energy transition	2022	Renewable and Sustainable Energy Reviews	"This expert insight provides a brief overview of analysis from 100 legal cases from across the world and demonstrates which forms of justice and human rights are being implemented in the energy transition today."
Who are the victims of low-carbon transitions? Towards a political ecology of climate change mitigation	2021	Energy Research & Social Science	"This study critically examines 20 years of geography and political ecology literature on the energy justice implications of climate change mitigation."
Reviews that stress the importance of energy justice in other discourses or disciplines			
A review of dominant sustainable energy narratives	2021	Renewable and Sustainable Energy Reviews	"We present 13 dominant sustainable energy narratives that frequently appear in the scientific literature and have the potential to change the current unsustainable trajectory. (…) the second addresses how to ensure social justice (…)"

Fostering justice through engagement: A literature review of public engagement in energy transitions	2023	Energy Research & Social Science	"In this review, we explore how justice considerations are addressed in the literature on public engagement in energy transitions. Our point of departure is that all three tenants of energy justice – procedural, distributional, and recognition justice – need to be considered when designing, implementing, and evaluating processes of public engagement."
Minerals and energy interface in energy transition pathways: A systematic and comprehensive review	2022	Journal of Cleaner Production	"This paper presents a systematic and comprehensive review of 68 studies from a policy perspective studying the critical minerals – ET nexus. Most literature has approached the issue from the perspective of economics or geopolitics, followed by a broad governance approach. Very little attention has been given to legal and institutional aspects and justice in particular."
Reviews on the energy justice scholarship			
Co-authorship in energy justice studies: Assessing research collaboration through social network analysis and topic modeling	2022	Energy Strategy Reviews	"understand the structure of scientific collaboration networks around energy justice, while also exploring existing research topics in the field."
Conceptual reviews on energy justice in relation to a specific topic			
Energy justice as a search light for gender-energy nexus: Towards a conceptual framework	2021	Renewable and Sustainable Energy Reviews	"conceptual review of 56 scientific publications by identifying, examining and synthesising the key ideas and debates in energy justice and engendering energy policy."
Gender, sexuality, and feminist critiques in energy research: A review and call for transversal thinking	2021	Energy Research & social science	"This article presents a narrative review of recent energy research that engages with critical sexuality, gender, and feminist theories."
Elite power in low-carbon transitions: A critical and interdisciplinary review	2019	Energy Research & Social Science	"this article explores the ways in which transitions can exacerbate, reconfigure or be shaped by "elite power.""
Conceptualising restorative justice in the energy Transition: Changing the perspectives of fossil fuels	2021	Energy Research & Social Science	"This review aims to capture the addition of restorative justice and provides a comparative law and case study perspective"

What is energy democracy? Connecting social science energy research and political theory	2018	Energy Research & Social Science	"critical evaluation of the term and how it is used. By reviewing existing energy democracy publications and bringing these in conversations with more theoretical literature"
What is the 'Just Transition'?	2018	Energy Research & Social Science	"The 'just transition' is a concept receiving more attention in the literature to-date. This critical review discusses this and how there are overlaps with literature on energy, environmental and climate justice. Within the separate energy, environment and climate change scholar communities, there is too much distortion of what the 'transition' means and what 'justice' means, and they all should be understood within the just transition concept.
Alleviation of energy poverty through transitions to low-carbon energy infrastructure	2023	Energy Research & Social Science	"Yet how can an abstract concern with a normative concept like justice be brought to bear on the socio-technical complexities of specific changes in energy infrastructure? This is an important and timely question to consider in a practical sense, since the energy policy landscape is increasingly focused on a 'just transition' as combining decarbonisation and a progressive vision of social equity and justice. Our synthesis review argues that a focus on the alleviation of energy poverty – a condition whereby people are unable to secure adequate levels of energy services in the home – can enable policy-oriented mobilisation of energy justice as an integral component of evolving energy infrastructure"
Conceptual reviews that focus explicitly on the tenet framework and its normative functioning			
Energy justice revisited: A critical review on the philosophical and political origins of equality	2020	Energy Research & Social Science	"different definitions of what energy justice is, appear to be competing, or at least they seem to be devoid of a theoretical effort at systematization of the concepts, an effort which could find a common theoretical root underpinning the current energy justice definitions. While tracing a common theoretical root might appear unnecessary to some, we argue that it contributes to strengthening the concept of energy justice and improves its suitability to application in policy design

			and policy evaluation. In this paper, we attempt to fill this gap, discussing how energy justice is embedded in the tradition of philosophical and political thought, with reference to the concept of equality."
Energy justice: A conceptual review	2016	Energy Research & Social Science	"Within this exploration, we give an account of its core tenets: distributional, recognition and procedural. (…)"
Energy justice in the developing world: a review of theoretical frameworks, key research themes and policy implications	2020	Energy for Sustainable Development	"This paper thus systematically reviews the current state of 'developing economy' and 'economy in transition' literature in the energy justice field. In doing this we analyse the (1) methods, energy types and locations explored thus far, unearthing key gaps, as well as (2) the multitude of 'justice-led' theoretical frameworks used. We also identify core themes illuminated by energy justice research in the developing world"
Synthesizing value sensitive design, responsible research and innovation, and energy justice: A conceptual review	2020	Energy Research & Social Science	"This paper fills the emergent gap of critically discussing the concepts and their strengths and challenges as well as how they could contribute to each other."
			Total: 27 reviews

Appendix 2: The articles selected for review (Chapter 2)

Title	Journal	Year
A just transition for whom Politics contestation and social identity in the disruption of coal in the Powder River Basin	Energy Research & Social Science	2020
A Justice and Wellbeing Centered Framework for Analysing Energy Poverty in the Global South	Ecological Economics	2019
A Mismatch in Future Narratives? A Comparative Analysis Between Energy Futures in Policy and of Citizens	Front. Sustain. Cities	2021
Achieving sustainable supply chains through energy justice	Applied Energy	2014
Advancing an Energy Justice Perspective of Fuel Poverty Household Vulnerability and Domestic Retrofit Policy in the United Kingdom	Energy Research & Social Science	2017
Advocating a just transition in Appalachia: Civil society and industrial change in a carbon-intensive region	Energy Research & Social Science	2021
An Ecohealth approach to energy justice: Evidence from Malawi's energy transition from biomass to electrification	Energy Research & Social Science	2021
Applying energy justice into the energy transition	Renewable and Sustainable Energy Reviews	2022
Assessing african energy transitions Renewable energy policies, energy justice, and SDG 7	Politics and Governance	2021
Assessing the energy justice implications of bioenergy development in Nepal	Energy, Sustainability and Society	2017
Attributing responsibility-for-energy-justice--A-case-study-of_2017_Energy-P	Energy Policy	2017
Burdened by renewable energy? A multi-scalar analysis of distributional justice and wind energy in the United States	Energy Research & Social Science	2020
Can authoritarian regimes achieve just energy transition? Evidence from China's solar photovoltaic poverty alleviation initiative	Energy Research & Social Science	2021
Chains of Trust Energy Justice Public Engagement and the First Offshore Wind Farm in the United States	Energy Research & Social Science	2019
Community benefits from offshore renewables: The relationship between different understandings of impact community and benefit	Environment and Planning C: Politics and Space	2017
Community Energy Companies in the UK: A Potential Model for Sustainable Development in "Local" Energy?	Sustainability	2017
Conceptualising restorative justice in the energy Transition: Changing the perspectives of fossil fuels	Energy Research & Social Science	2021

Confronting energy poverty in europe: A research and policy agenda	Energies	2021
Contested notions of energy justice and energy futures in struggles over tar sands development in British Columbia, Canada	Futures	2022
"Contested renewable energy projects in Latin America: bridging frameworks of justice to understand 'triple inequalities of decarbonisation policies'"	Journal of Environmental Policy & Planning	2021
Critical Energy Justice in US Natural Gas Infrastructuring	Energy Research & Social Science	2018
Decarbonization and its discontents: a critical energy justice perspective on four low-carbon transitions	Climate change	2019
Densification, what does it mean for fuel poverty and energy justice? An empirical analysis	Energy Policy	2018
Designing for justice in electricity systems: A comparison of smart grid experiments in the Netherlands	Energy Policy	2020
Developing a legal framework for energy storage technologies in the U.S: The case of pumped underground storage hydro	The Electricity Journal	2021
Distributed power sources to improve the decent living standard (Dls) in the ethnic minority areas of myanmar	Sustainability	2021
Distributional justice in solar energy implementation in India: The case of Charanka solar park	Journal of Rural Studies	2016
Distributional justice in Swedish wind power development – An odds ratio analysis of windmill localization and local residents' socio-economic characteristics	Energy Policy	2017
Distributional trade-offs between regionally equitable and cost-efficient allocation of renewable electricity generation	Applied Energy	2019
Do renewable energy communities deliver energy justice? Exploring insights from 71 European cases	Energy Research & Social Science	2021
Economizing justice: Turning equity claims into lower energy tariffs in Chile	Energy Policy	2017
Embodied energy injustices: Unveiling and politicizing the transboundary harms of fossil fuel extractivism and fossil fuel supply chains	Energy Research & Social Science	2019
Empowering energy citizenship among the energy poor	Energy Research & Social Science	2022
Empowering energy justice	Int J Environ Res Public Health	2016
Energy (in)justice in off-grid rural electrification policy: South Africa in focus	Energy Research & Social Science	2018
Energy and the Good Life: Capabilities as the Foundation of the Right to Access Energy Services	Journal of Human Development and Capabilities	2021
Energy decisions reframed as justice and ethical concerns	Nature Energy	2016
Energy efficiency as energy justice: addressing racial inequities through investments in people and places	Energy Efficiency	2020

Energy 4 all? Investigating gendered energy justice implications of community-based micro-hydropower cooperatives in Ethiopia	Innovation: The European Journal of Social Science Research	2020
Energy inequity variation across contexts	Applied Energy	2022
Energy Injustice and Nordic Electric Mobility: Inequality, Elitism, and Externalities in the Electrification of Vehicle-to-Grid (V2G) Transport	Ecological Economics	2019
Energy justice and Canada's National Energy Board: A critical analysis of the Line 9 pipeline decision	Sustainability	2019
Energy justice and controversies: Formal and informal assessment in energy projects	Energy Policy	2017
Energy justice and offshore oil: weighing environmental risk and privilege in the North Atlantic	Environmental Sociology	2020
Energy Justice and Smart Grid Systems: Evidence from the Netherlands and the United Kingdom	Applied Energy	2018
Energy justice and sustainability transitions in Mozambique	Applied Energy	2018
Energy justice and the co-opting of indigenous narratives in U.S. offshore wind development	Renewable Energy Focus	2022
Energy justice and the legacy of conflict: Assessing the Kosovo C thermal power plant project	Energy Policy	2017
Energy justice as part of the acceptance of wind energy: An analysis of Limburg in the Netherlands	Energies	2019
Energy justice at the end of the wire: Enacting community energy and equity in Wales	Energy Policy	2017
Energy justice discourses in citizen deliberations on systems flexibility in the United Kingdom: Vulnerability, compensation and empowerment	Energy Research & Social Science	2020
Energy justice for all? Rethinking Sustainable Development Goal 7 through struggles over traditional energy practices in Sierra Leone	Energy Policy	2017
Energy justice from the bottom up: A capability approach to community acceptance of wind energy in Mexico	Energy Research & Social Science	2020
Energy justice gaps in renewable energy transition policy initiatives in Vermont	Energy Policy	2021
Energy justice in the Arctic: Implications for energy infrastructural development in the Arctic	Energy Research & Social Science	2016
Energy Justice Through Solar Constructing and Engaging Low-Income Households	Front. Sustain. Cities	2021
Energy justice, unequal access to affordable warmth, and capability deprivation: A quantitative analysis for Belgium	Applied Energy	2018
Energy made in Northern Friesland: fair enough?	Local Environment	2019
Energy political ecologies in the South Pacific The politics of energy transitions in Vanuatu	Cambridge Journal of Regions, Economy and Society	2021
Energy poverty and the role of institutions: exploring procedural energy justice - Ombudsman in focus	Journal of Environmental Policy & Planning	2023

Energy solution or future pollution? Applying an energy justice perspective to coal seam gas in New South Wales	Australian Geographer	2020
Energy Storage as an Equity Asset	Current Sustainable/Renewable Energy Reports	2021
Environmentalists and their conflicts with Energy Justice – Concept of "Power-Environ" in the Athirappilly HEPP in Kerala	Energy Policy	2019
Evaluating sub-Saharan Africa's electrification progress: Guiding principles for pro-poor strategies	Energy Research & Social Science	2021
Examining energy sufficiency and energy mobility in the global south through the energy justice framework	Energy Policy	2018
Examining new geographies of coal: Dissenting energyscapes in Colombia and Turkey	Applied Energy	2018
Exploring participatory energy budgeting as a policy instrument to foster energy justice	Energy Policy	2017
Finance and justice in low-carbon energy transitions	Applied Energy	2018
For politics, people, or the planet? The political economy of fossil fuel reform, energy dependence and climate policy in Haiti	Energy Research & Social Science	2020
Foregrounding citizen imaginaries: Exploring just energy futures through a citizens' assembly in Lebanon	Futures	2022
Fracking controversies: Enhancing public trust in local government through energy justice	Energy Research & Social Science	2020
Framing energy justice: perspectives from activism and advocacy	Energy Research & Social Science	2016
From energy privilege to energy justice: A framework for embedded sustainable development	Energy Research & Social Science	2021
Gendered energy poverty and energy justice in rural Bangladesh	Energy Policy	2020
Green infrastructure and energy justice in health adaptation leveraging: climate policy innovation and vulnerability-readiness nexus	Journal of Environmental Policy & Planning	2022
Green transformations in Vietnam's energy sector	Asia & The Pacific Policy Studies	2018
Grounding the energy justice lifecycle framework: An exploration of utility-scale wind power in Oaxaca, Mexico	Energy Research & Social Science	2021
Harnessing social innovation for energy justice: A business model perspective	Energy Policy	2017
How injustice can lead to energy policy failure: A case study from Guatemala	Energy Policy	2022
How modern are renewables? The misrecognition of traditional solar thermal energy in Peru's energy transition	Energy Policy	2019
How the Concept of Dignity Is Relevant to the Study of Energy Poverty and Energy Justice	Front. Sustain. Cities	2021
How to avoid unjust energy transitions: insights from the Ruhr region	Energy, Sustainability and Society	2022

How to make building renovation work for low-income renters: Preferences for distributional principles and procedural options in Austria	Energy Research & Social Science	2021
Humanizing sociotechnical transitions through energy justice: An ethical framework for global transformative change	Energy Policy	2018
Hydropower renewable and contributing to sustainable development: A critical analysis from the Mazar-Dudas project (Ecuador)	Local Environment	2022
In pursuit of energy justice	Energy Policy	2017
In the light of what we cannot see: Exploring the interconnections between gender and electricity access	Energy Research & Social Science	2020
Incorporating energy justice into utility-scale photovoltaic deployment: A policy framework	Renewable Energy Focus	2022
Injustice and environmental harm in extractive industries and solar energy policies in Indonesia	International Journal for Crime Justice and Social Democracy	2021
Injustices in phasing out nuclear power?: Exploring limited public participation and transparency in Taiwan's transition away from nuclear energy	Energy Research & Social Science	2021
Innovative but unjust? Analysing the opportunities and justice issues within positive energy districts in Europe	Energy Research & Social Science	2021
Intermediating energy justice? The role of intermediaries in the civic energy sector in a time of austerity	Applied Energy	2018
Introduction to evaluating energy justice across the life cycle: A social life cycle assessment approach	Applied Energy	2019
Is community renewable energy always just? Examining energy injustices and inequalities in rural Indonesia	Energy Research & Social Science	2021
Is green a Pan-African colour? Mapping African renewable energy policies and transitions in 34 countries	Energy Research & Social Science	2020
Is hydropower worth it? Exploring amazonian resettlement, human development and environmental costs with the Belo Monte project in Brazil	Energy Research & Social Science	2021
Just transition management: Balancing just outcomes with just processes in Australian renewable energy transitions	Applied Energy	2018
Just transition: Framing, organizing, and power-building for decarbonization	Energy Research & Social Science	2022
Justice and critical mineral development in Indonesia and across ASEAN	The Extractive Industries and Society	2021
Justice implications of clean energy policies and programs in the United States A theoretical and empirical exploration	Sustainability	2019
Justice in Solar Energy Development	Solar Energy	2021
Justifiable energy injustices? Exploring institutionalised corruption and electricity sector "problem-solving" in Ghana and Kenya	Energy Research & Social Science	2021

Knowledge politics, vulnerability and recognition-based justice: Public participation in renewable energy transitions in India	Energy Research & Social Science	2021
Large dams, energy justice and the divergence between international, national and local developmental needs and priorities in the global South	Energy Research & Social Science	2018
Let Capabilities Ring: Operationalizing Energy Justice in Guinea	Energy Research & Social Science	2021
Local energy, a political resource: dependencies and insubordination of an urban "Stadtwerk" in France (Metz, Lorraine)	Local Environment	2019
Low Carbon Mobility Transitions and Justice: A Case of Costa Rica	Development	2022
Low carbon system innovation through an energy justice lens: Exploring domestic heat pump adoption with direct load control in the United Kingdom	Energy Research & Social Science	2022
Low-carbon energy, sustainable development, and justice: Towards a just energy transition for the society and the environment	Sustainable Development	2021
Max Power: Implementing the Capabilities Approach to Identify Thresholds and Ceilings in Energy Justice	Science and Engineering Ethics	2022
Mitigating inequality with emissions? Exploring energy justice and financing transitions to low carbon energy in Indonesia	Energy Research & Social Science	2021
More than just jobs: Understanding what drives support for a declining coal industry.	The Extractive Industries and Society	2022
Multinational Energy Justice for Managing Multinational Risks: A Case Study of Nuclear Waste Repositories	Risk, Hazards, & Crisis in Public Policy	2019
National Energy Transition Framework toward SDG7 with Legal Reforms and Policy Bundles: The Case of Taiwan and Its Comparison with Japan	Energies	2020
Natural gas industry transformation in Peninsular Malaysia: The journey towards a liberalised market	Energy Policy	2019
Overcoming energy injustice? Bulgaria's renewable energy transition in times of crisis	Energy Research & Social Science	2018
Pipeline Pipedreams Oil Spills, Pipeline Accidents, and the Local Truths Embedding Fossil Fuels in the Yellowstone River Valley, United States	Energy Research & Social Science	2021
Planning with justice: Using spatial modelling to incorporate justice in electricity pricing – The case of Tanzania	Applied Energy	2020
Politicizing hydroelectric power plants in Portugal: spatio-temporal injustices and psychosocial impacts of renewable energy colonialism in the Global North	Globalizations	2022
"Power farmers" in north India and new energy producers around the world: Three critical fields for multiscalar research	Energy Research & Social Science	2020
'Practical recognition' as a suitable pathway for researching just energy futures: Seeing like a 'modern' electricity user in Ghana	Energy Research & Social Science	2020

Practices and imaginations of energy justice in transition. A case study of the Noordoostpolder, the Netherlands	Energy Policy	2017
Prioritizing mitigation efforts considering co-benefits, equity and energy justice: Fossil fuel to renewable energy transition pathways	Applied Energy	2018
Procedural (in)justice in the implementation of solar energy: The case of Charanaka solar park, Gujarat, India	Energy Policy	2015
Procedural injustices in large-scale solar energy: a case study in the Mayan region of Yucatan, Mexico	Journal of Environmental Policy & Planning	2015
Productive uses of energy: A solution for promoting energy justice in rural areas in West Africa	Renewable and Sustainable Energy Reviews	2022
Proposing an evaluation framework for energy policy making incorporating equity: Applications in Australia	Energy Research & Social Science	2016
Proximities of energy justice: contesting community energy and austerity in England	Energy Research & Social Science	2020
Proyectos de Muerte: Energy justice conflicts on Mexico's unconventional gas frontier	The Extractive Industries and Society	2018
Radical energy justice: a Green Deal for Romanian coal miners?	Journal of Environmental Policy & Planning	2021
Reconciling power, relations, and processes: The role of recognition in the achievement of energy justice for Aboriginal people	Applied Energy	2018
Renewable energy communities as 'socio-legal institutions': A normative frame for energy decentralization?	Renewable and Sustainable Energy Reviews	2020
Renewable, ethical? Assessing the energy justice potential of renewable electricity	AIMS Energy	2017
Rice Cookers, Social Media, and Unruly Women: Disentangling Electricity's Gendered Implications in Rural Nepal	Frontiers in Energy Research	2019
Sacrificing the local to support the national: Politics, sustainability, and governance in Nepal's hydropower paradox	Energy Research & Social Science	2021
Scalar Containment of Energy Justice and Its Democratic Discontents: Solar Power and Energy Poverty Alleviation	Front. Sustain. Cities	2021
Social justice, fairness and exclusion in the South Korean electricity sector	Energy Research & Social Science	2019
Solar 'power': Socio-political dynamics of infrastructural development in two Western Indian states	Energy Research & Social Science	2018
Space of energy well-being: Social housing tenants' everyday experiences of fuel poverty	Transactions of the Institute of British Geographers	2019
Spatial justice and the land politics of renewables: Dispossessing vulnerable communities through solar energy mega-projects	Geoforum	2016

Spatialising procedural justice: fairness and local knowledge mobilisation in nuclear waste siting	Local Environment	2020
'Successful' low-carbon energy transitions at the community level? An energy justice perspective	Applied Energy	2018
Targeting energy justice: Exploring spatial, racial/ethnic and socioeconomic disparities in urban residential heating energy efficiency	Energy Policy	2016
Temporality, consumption, and conflict: exploring user-based injustices in European low-carbon transitions	Technology Analysis & Strategic Management	2021
Temporality, vulnerability, and energy justice in household low carbon innovations	Energy Policy	2019
Tensions, capabilities, and justice in climate change mitigation of fossil fuels	Energy Research & Social Science	2019
Tenure security, housing quality and energy (in)justice in Dhaka's slums	Global Discourse	2022
The cultural dynamics of energy: The impact of lived experience, preference and demographics on future energy policy in the United States	Energy Research & Social Science	2021
The emergence of the 'social licence to operate' in the extractive industries	Resources Policy	2021
The emerging potential of microgrids in the transition to 100% renewable energy systems	Energies	2021
The energy injustice of hydropower: Development, resettlement, and social exclusion at the Hongjiang and Wanmipo hydropower stations in China	Energy Research & Social Science	2020
The Energy Transition: Democracy, Justice and Good Regulation of the Heat Market	Energies	2020
The German energy transition and the eroding consensus on ecological modernization: A radical democratic perspective on conflicts over competing justice claims and energy visions	Futures	2022
The need for gender-based approach in the assessment of local energy projects	Energy for Sustainable Development	2022
The prospects of decentralised solar energy home systems in rural communities: User experience, determinants, and impact of free solar power on the energy poverty cycle	Energy Strategy Reviews	2019
The relationship between justice and acceptance of energy transition costs in the UK	Applied Energy	2018
The role of community acceptance in planning outcomes for onshore wind and solar farms: An energy justice analysis	Applied Energy	2018
The role of justice in developing critical minerals	The Extractive Industries and Society	2020
The role of traditional rituals in resisting energy injustice: The case of hydropower developments in Svaneti, Georgia	Energy Research & Social Science	2021
The temporalities of energy justice: Examining India's energy policy paradox using non-western philosophy	Energy Research & Social Science	2019
The troubled path to ending darkness: Energy injustice encounters in Malawi's off-grid solar market	Energy Research & Social Science	2020

"They are grinding us into the ground" – The lived experience of (in)energy justice amongst low-income older households	Applied Energy	2018
Thinking, doing, organising: Prefiguring just and sustainable energy systems via collective prosumer ecosystems in Europe	Energy Research & Social Science	2022
Toward an urban political ecology of energy justice: The case of rooftop solar in Tucson, AZ	Journal of Political Ecology	2017
Towards a just energy transition, barriers and opportunities for positive energy district creation in Spain	Sustainability	2021
Towards a multi-scalar and multi-horizon framework of energy injustice: A whole systems analysis of Estonian energy transition	Political Geography	2022
Transactional colonialism in wind energy investments: Energy injustices against vulnerable people in the Isthmus of Tehuantepec	Energy Research & Social Science	2021
Transboundary hydropower in contested contexts: Energy security, capabilities, and justice in comparative perspective	Energy Strategy Reviews	2021
Turn up the heat! Contesting energy poverty in Buffalo, NY	Geoforum	2016
Unattainable proximity: Solar power and peri-urbanity in central Burkina Faso	Energy Policy	2021
Urgency in energy justice: Contestation and time in prospective shale extraction in the United States and United Kingdom	Energy Research & Social Science	2018
Using energy vulnerability to measure distributive injustice in rural heating energy reform: A case study of natural gas replacing bulk coal for heating in Gaocheng District, Hebei Province, China	Ecological Economics	2022
Using the Capability Approach as a normative perspective on energy justice Insights from two case studies on digitalisation in the energy sector	Journal of Human Development and Capabilities	2021
Wasting Democracy, Fueling Dissent: Refuse-Derived Fuels in Can Sant Joan (Catalonia)	Front. Energy Res	2019
What shapes Norwegian wind power policy? Analysing the constructing forces of policymaking and emerging questions of energy justice	Energy Research & Social Science	2021
When Energy Justice Encounters Authoritarian Environmentalism: The Case of Clean Heating Energy Transitions in Rural China	Energy Research & Social Science	2020
When justice narratives meet energy system models: Exploring energy sufficiency, sustainability, and universal access in Sub-Saharan Africa	Energy Research & Social Science	2021
Wind energy in the Isthmus of Tehuantepec: conflicts and social implications	Environment, Development and Sustainability	2021
Women's Leadership in Renewable Transformation, Energy Justice and Energy Democracy: Redistributing Power	Energy Research & Social Science	2019
Total: 179		

Appendix 3: An overview of the themes and subthemes that were inductively derived through thematic coding (Chapters 3 and 6)

Themes (code groups)	Subthemes (codes) and number of quotes
(1) (problems with) the compensation system	Commissie Mijnbouwschade (N=15) Effect inequality on social cohesion (N=21) History of compensation measures (N=19) IMG (N=147) Institution carrousel compensation system (N=24) Metaphors of justice (N=27) Legal presumption of proof (N=91)
(2) changes in the contours around UGS Grijpskerk and Norg;	Capacity Norg (N=35) Conversion Grijpskerk (N=28) Further gas extraction (N=5) NAM for sale (N=3) Filling level (N=3)
(3) effects from mining activities;	Earthquakes (N=14) Damage (N=47) Deltares (N=9) Emotional damage (N=55) Low frequent sounds (N=21) More research (N=48) Physical damage (N=50) Perceptions of science (N=20) TNO/TU Delft report (N=30) Future of region (N=3)
(4) participation in decision-making procedures;	Decision procedures (N=71) *Omgevingstafels* (N=47)
5) attitudes towards (management and measurements of) gas infrastructures	Opinions about gas infrastructure (N=42) Trust in measurements (N=33) Perceptions about SodM (N=9)
(6) perceptions about regional and national identities	Acknowledgement of the issue in policy (N=4) Perceptions about citizens (N=22) Media attention (N=19) *Wingewest* (colony) (N=46)

Summary

One of the biggest challenges of our time is how to enable a transition from a fossil-based energy system to a sustainable one. This transition requires tremendous amounts of energy storage capacities, requiring technological innovation. In addition, developing and deploying large-scale energy storage involves intricate societal and ethical challenges. Energy storage, and energy systems in general, can give rise to local and global injustices, and thus it is important to develop, deploy and regulate energy storage technologies responsibly and in a just manner.

However, there is *normative uncertainty* about what 'energy justice' implies for (decisions about) energy systems, as different stakeholders have different ideas about when something is (un)just. Competing conceptions of justice cause, firstly, energy conflicts, social movements, resistance, and the articulation of grievances and claims of injustice in society. Second, normative uncertainty raises the question of 'what to do', or how to design just energy technologies, systems and policies.

Energy justice scholarship has two aims, namely to (a) describe, understand, and causally explain claims of injustice (descriptive aim) and (b) to evaluate energy systems in terms of justice and propose policy and design recommendations (normative aim). However, existing energy justice frameworks are limited in both aims. On the one hand, existing energy justice frameworks lack descriptive power, and as such they are ill-adapted to analyse the claims of injustice in relation to energy storage solutions (descriptive challenge). On the other hand, existing frameworks are insufficient to justify and substantiate policy and design recommendations that claim to make energy storage more 'just' (normative challenge). The descriptive and normative challenges prevent energy justice from being applied rigorously to energy storage and energy systems in general.

The aim of this dissertation is to strengthen the conceptual foundations of energy justice in light of normative uncertainties. As such, the main research question is: How to reconceptualise energy justice in light of normative uncertainties? To answer this question, I leverage literature and methodologies from the social sciences and political philosophy, and more specifically Critical Theory. On the one hand, qualitative empirical methods are adopted to study how justice is conceptualised and institutionalised in energy contexts. On the other hand, concepts and conceptual nuances in political philosophy can strengthen the descriptive power of energy justice frameworks, and theories of justice help substantiate normative conclusions.

Next to the introduction, this dissertation consists of five chapters. Chapter 2 presents a critical conceptual review of how normative claims are justified in the energy justice scholarship, and concludes that the most frequently used energy justice framework does not do justice to normative uncertainties. This chapter revisits the energy justice framework by adding five dimensions in which there can be normative uncertainty, namely principles of justice, scale, subject, knowledge, and time. The revisited framework functions as a heuristic tool to analyse claims of injustice, and provokes reflection on the normative assumptions behind (recommendations for) energy design and policy, which is a first step towards tackling the normative challenge.

Chapter 3 focuses on the descriptive challenge of energy justice frameworks. This chapter conducted a qualitative study of the controversy around underground gas storage Grijpskerk and Norg, and shows that the energy justice tenet framework is insufficient to understand what the conflict is about. To strengthen the framework, it is crucial to distinguish between *concepts* and *conceptions* of justice. This distinction is able to capture the core of the conflict, which is about competing conceptions of restorative justice.

Chapter 4 focuses on recognition justice as a tenet in the energy justice framework. In this chapter, a systematic literature study was conducted on the definitions and interpretations of recognition justice, showing that the concept currently refers to a large variety of phenomena. By studying Axel Honneth and Nancy Fraser, I propose a revisited definition of recognition as concerned with the adequate recognition of all actors through love, law, and status order.

In Chapter 5, I establish that recognition justice is generally viewed as a positive phenomenon contributing to energy and environmental justice. However, recognition also has a dark side: striving for more and better recognition might be counterproductive in achieving just socio-technical systems. This paper provides an overview of the dangers of recognition justice in energy contexts. Stressing the dangers of recognition draws attention to the potentially unjust backdrop of social norms and identities against which claims of misrecognition are voiced, which contributes to both the descriptive and normative challenges of energy justice.

Chapter 6 focuses on the mechanisms that hide energy injustices. Although much scholarly attention has been given to frameworks to *analyse* energy injustices, a consistent framework for policymakers and researchers to *detect* them is lacking. This chapter explores the mechanisms that prevent energy injustices from surfacing through philosophical literature and two case studies. It proposes a framework to

understand why injustices might remain unseen, inspired by the concept of *hidden morality* as introduced by the philosopher Axel Honneth.

The interdisciplinary conceptual contributions in this dissertation help tackle the descriptive and normative challenges of energy justice. The revisited conceptual toolkit developed in this dissertation, including the revisited energy justice framework, the definition of recognition justice, and the hidden morality heuristic, are better suited to analyse and detect energy conflicts and claims of injustice. Moreover, this dissertation stresses the importance of acknowledging normative uncertainty in energy decision-making, and the need for justification of normative claims. Claims of injustice are made against a backdrop of social norms, power structures, and identities. The backdrop of social norms influences what and whose grievances are detected and which ones remain hidden. Moreover, this backdrop impacts how injustices are experienced and framed. As such, both claims of injustice and the backdrop of social norms should be made object of critical reflection. As such, this dissertation calls for a critical dialogue, both in academia and society, on 'energy justice' to help guide decision-making towards more just energy systems.

It is crucial to develop and deploy just energy storage systems. This dissertation contributes to this mission by strengthening the conceptual framework of energy justice. The result illustrates the merit of bridging energy social science and philosophy. The conceptual work done in this dissertation readied the path for future research on energy storage and justice.

Samenvatting

De energietransitie is een van de grootste uitdagingen van onze tijd. De overgang naar hernieuwbare energie vereist veel energieopslagcapaciteit, waarvoor technologische innovatie noodzakelijk is. Daarnaast brengt het op grote schaal ontwikkelen en realiseren van energieopslag sociale en ethische uitdagingen met zich mee. Energieopslag, en energiesystemen in het algemeen, kunnen lokaal en globaal onrechtvaardigheden veroorzaken. Daarom is het cruciaal dat energieopslag op een verantwoorde en rechtvaardige manier wordt ontwikkeld, uitgerold, en gereguleerd.

Er is echter *normatieve onzekerheid* over energierechtvaardigheid, want stakeholders hebben verschillende ideeën over wanneer iets (on)rechtvaardig is. Conflicterende opvattingen van rechtvaardigheid veroorzaken energieconflicten, sociale bewegingen, weerstand en ontevredenheid in de maatschappij. Ook roept normatieve onzekerheid de vraag op 'wat te doen', met andere woorden, hoe kunnen we energiesystemen, -technologieën en -beleid het best vormgeven.

Energierechtvaardigheid als academisch veld heeft twee doelen: ten eerste het beschrijven en begrijpen van beweringen van onrechtvaardigheid (descriptief doel) en ten tweede het evalueren van energiesystemen in termen van rechtvaardigheid en daaropvolgend het voorstellen van beleids- en ontwerpaanbevelingen (normatief doel). Bestaande raamwerken voor energierechtvaardigheid zijn onvoldoende in staat om deze doelen te bereiken. Enerzijds ontbreekt het deze raamwerken aan descriptieve capaciteiten, waardoor ze niet goed in staat zijn om onrechtvaardigheidsclaims rond energieopslag te analyseren (descriptieve uitdaging). Anderzijds zijn deze raamwerken onvoldoende om beleids- en ontwerpaanbevelingen te formuleren die energiesystemen rechtvaardiger zouden moeten maken (normatieve uitdaging). Deze descriptieve en normatieve uitdagingen verhinderen dat energierechtvaardigheid op heldere wijze kan worden toegepast op energieopslag en op energiesystemen in het algemeen.

Het doel van dit proefschrift is om de conceptuele basis van energierechtvaardigheid te versterken, in het licht van normatieve onzekerheden. Mijn hoofdvraag is: hoe kan energierechtvaardigheid worden geconceptualiseerd, in het licht van normatieve onzekerheden? Om deze vraag te beantwoorden, benut ik literatuur en methoden uit de sociale wetenschappen en politieke filosofie, en daarbinnen de kritische theorie. Ik gebruik kwalitatieve empirische methoden om te bestuderen hoe rechtvaardigheid wordt opgevat en geïnstitutionaliseerd in energiec-

ontexten. De concepten en nuances in de politieke filosofie kunnen de descriptieve capaciteiten van energierechtvaardigheid versterken, en theorieën van rechtvaardigheid kunnen worden ingezet om normatieve conclusies en aanbevelingen te substantiëren.

Na de introductie bevat dit proefschrift vijf hoofdstukken. Hoofdstuk Een is een kritisch-conceptueel overzicht van de manier waarop normatieve beweringen in het academische veld 'energierechtvaardigheid' worden gerechtvaardigd. De conclusie is dat het meest frequent gebruikte raamwerk onvoldoende recht doet aan normatieve onzekerheden. Dit hoofdstuk herziet het raamwerk van energierechtvaardigheid door vijf aspecten toe te voegen waar normatieve onzekerheid over kan bestaan, namelijk principes van rechtvaardigheid, schaal, subject, kennis, en tijd. Dit herziene raamwerk is een heuristisch hulpmiddel voor het analyseren van onrechtvaardigheidsclaims. Ook nodigt het raamwerk uit tot reflectie op de normatieve aannames in (aanbevelingen voor) energiebeleid en -ontwerp en zet het aldus een eerste stap richting het aangaan van de normatieve uitdaging.

Hoofdstuk Twee focust op de descriptieve uitdaging van energierechtvaardigheid. Dit hoofdstuk beschrijft een kwalitatief onderzoek naar de controverse rond de gasopslagen in Grijpskerk en Norg. Het laat zien dat het conflict niet begrepen kan worden aan de hand van het bestaande raamwerk voor energierechtvaardigheid. Om het raamwerk te versterken, is het cruciaal om *concepten* en *concepties* (of: opvattingen) van rechtvaardigheid te onderscheiden. Dit onderscheid stelt ons in staat om de kern van het conflict te begrijpen, dat draait rond verschillende opvattingen van herstellende rechtvaardigheid.

Hoofdstuk Drie gaat over rechtvaardigheid als erkenning, een van de categorieën van rechtvaardigheid in het energierechtvaardigheid-raamwerk. Dit hoofdstuk presenteert een systematisch literatuuronderzoek naar de definities en interpretaties van rechtvaardigheid als erkenning. Hieruit blijkt dat het concept doorgaans verwijst naar een grote variëteit aan fenomenen. Op basis van de ideeën van filosofen Axel Honneth en Nancy Fraser stel ik een herziene definitie voor van erkenning: erkenning verwijst naar de gepaste erkenning van alle actoren door liefde, recht, en maatschappelijke status.

In hoofdstuk Vier stel ik vast dat rechtvaardigheid als erkenning voornamelijk op een positieve en onkritische manier ingezet wordt in het wetenschappelijke veld. Erkenning heeft echter een schaduwkant: meer en betere erkenning kan ook contraproductief zijn in de strijd voor rechtvaardige socio-technische systemen. Dit hoofdstuk bevat een overzicht van de gevaren van rechtvaardigheid als erkenning in

energiecontexten. Dit overzicht laat zien dat mensen erkenning zoeken op basis van sociale normen en identiteiten die mogelijk onrechtvaardig zijn, en dit inzicht representeert weer een stap richting de descriptieve en normatieve doelen van energierechtvaardigheid.

Hoofdstuk Vijf bestudeert welke mechanismen verhinderen dat energie-onrechtvaardigheden aan het licht komen. Er is veel wetenschappelijke aandacht voor raamwerken die energieonrechtvaardigheden analyseren, maar een hulpmiddel om ze te detecteren ontbreekt. In dit hoofdstuk wordt een raamwerk geïntroduceerd om te begrijpen waarom onrechtvaardigheden onzichtbaar kunnen blijven, geïnspireerd door het concept *hidden morality* (verborgen moraliteit) dat geïntroduceerd werd door Axel Honneth. Daarnaast verkent dit hoofdstuk aan de hand van filosofische literatuur en twee casussen welke mechanismen ervoor zorgen dat energierechtvaardigheden verborgen blijven.

De interdisciplinaire conceptuele inzichten in dit proefschrift dragen bij aan de descriptieve en normatieve doelen van energierechtvaardigheid. De conceptuele bijdragen, zoals het raamwerk voor energierechtvaardigheid, de definitie van rechtvaardigheid als erkenning en de heuristiek van *hidden morality*, stellen ons in staat om energieconflicten en onrechtvaardigheidsclaims beter op te sporen en te analyseren. Ook benadrukt dit proefschrift het bestaan van normatieve onzekerheid bij het maken van beslissingen en de noodzaak om normatieve conclusies te rechtvaardigen. Onrechtvaardigheidsclaims worden gemaakt tegen een achtergrond van sociale normen, machtsstructuren, en identiteiten. Die achtergrond van sociale normen beïnvloeden welke stemmen er gehoord worden en welke verborgen blijven. Daarnaast beïnvloedt die achtergrond de wijze waarop onrechtvaardigheden worden ervaren en gearticuleerd. Kortom, niet alleen (on)rechtvaardigheidsclaims, maar ook de achtergrond van sociale normen moeten worden onderworpen aan kritische reflectie. Dit proefschrift roept op tot een kritische dialoog – in de wetenschap en in de maatschappij – over energierechtvaardigheid, zodat beslissingen in beleid en wetenschap bijdragen aan rechtvaardige energiesystemen.

Energieopslagsystemen moeten rechtvaardig zijn. Dit proefschrift versterkt het conceptuele raamwerk van energierechtvaardigheid, en draagt zo bij aan deze missie. Het resultaat is illustratief voor de winst die kan worden geboekt door sociale wetenschappen en filosofie te combineren. Het conceptuele werk in dit proefschrift maakt de weg vrij voor toekomstig onderzoek naar energieopslag en rechtvaardigheid.

About the author

Nynke van Uffelen grew up in Zwolle, and her interest in philosophy was sparked at the Meander College in Zwolle, a school that takes pride in its culture and music programs. At the age of 18, she moved to Leuven (Belgium) to study philosophy, with a minor in political science. During her studies, she focused on political philosophy, Critical Theory and philosophy of education. After her philosophy studies, she obtained a master's diploma in education. Her interest in environmental and climate justice was sparked during her first job as a project coordinator at UCSIA.

In January 2021, she started her PhD at the TU Delft in the Ethics and Philosophy of Technology section, with Behnam Taebi, Udo Pesch and Martijn Groenleer (Tilburg University). She is part of the NWO-funded RELEASE-program, which focuses on developing and upscaling three promising energy storage solutions: power-to-hydrogen-to-power, power-to-hydrocarbon-to-power and (redox) flow batteries. Besides the technical challenges of energy storage, RELEASE also includes a research line on the challenges related to governance, ethics, and system integration. Nynke's PhD position is called "ethically responsible design of a storage system", acknowledging the importance of the ethical perspective in designing our energy future.

Still living in Belgium, she crossed national borders multiple times per week. During her PhD, she presented at numerous international conferences, building an elaborate international network in academia, policy, public research institutes, and industry. Moreover, she obtained the UTQ (University Teaching Qualification), gave several guest lectures at multiple universities, and supervised five master students' thesis projects, three as a daily supervisor. In 2022, she was 4TU Ethics PhD representative, and she co-organised the first edition of the Philosophy in Interdisciplinary Research Conference (PIRC) in Leuven.

Nynke is not an 'ivory tower' political philosopher: she always aims to produce relevant research for society, and society co-shapes her conceptualisations and results. Her work is radically interdisciplinary, and she mostly writes for interdisciplinary audiences and frequently adopts qualitative social science methods. To her, sparking the dialogue between science and society is both interesting and an important moral responsibility as an academic. She is an editor of the essay journal *Streven Vrijplaats* and frequently writes essays to communicate research findings. She is often invited as a speaker or panel member for events beyond academia. Moreover, she regularly

deliberates with policymakers. For example, she became part of a group of scientists to advise on Dutch climate policies, including the Klimaatakkoord 2025-2035. Moreover, her revisited energy justice framework has sparked a broad discussion with and within Topsector Energie, RVO, and TNO.

Next to her academic life, Nynke enjoys playing the piano, running, sewing, writing essays, making pasta, drawing and painting, taking long walks, bird watching, playing board games, salsa dancing, and connecting with family and friends.

List of Publications

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Simon Stevin (1548-1620)

This series in the philosophy and ethics of technology is named after the Dutch / Flemish natural philosopher, scientist and engineer Simon Stevin. He was an extraordinarily versatile person. He published, among other things, on arithmetic, accounting, geometry, mechanics, hydrostatics, astronomy, theory of measurement, civil engineering, the theory of music, and civil citizenship. He wrote the very first treatise on logic in Dutch, which he considered to be a superior language for scientific purposes. The relation between theory and practice is a main topic in his work. In addition to his theoretical publications, he held a large number of patents, and was actively involved as an engineer in the building of windmills, harbours, and fortifications for the Dutch prince Maurits. He is famous for having constructed large sailing carriages.

Little is known about his personal life. He was probably born in 1548 in Bruges (Flanders) and went to Leiden in 1581, where he took up his studies at the university two years later. His work was published between 1581 and 1617. He was an early defender of the Copernican worldview. He died in 1620, but the exact date and the place of his burial are unknown. Philosophically he was a pragmatic rationalist. For him, wonder about a phenomenon, however mysterious, should be the starting point for seeking understanding or even ultimate explanation through human reasoning. Hence the dictum 'Wonder is no Wonder' that he used on the cover of several of his books.

Energy storage, and energy systems in general, can give rise to local and global injustices, and thus it is important to develop, deploy and regulate energy systems in a just manner. Energy justice scholarship has two aims, namely to (a) understand and explain claims of injustice (descriptive aim) and (b) evaluate energy systems in terms of justice and propose policy and design recommendations (normative aim). However, existing energy justice frameworks have limited capacities to achieve both aims because they insufficiently acknowledge normative uncertainties. Different stakeholders have different ideas about when something is (un)just, and as such, there is normative uncertainty about what 'energy justice' implies for energy systems. This dissertation aims to strengthen the conceptual foundations of energy justice in light of normative uncertainties, which helps achieve both aims. To do so, the dissertation leverages social sciences and political philosophy, more specifically Critical Theory. The conceptual contributions in this dissertation help detect, analyse, and evaluate energy conflicts and claims of injustice and include a revisited energy justice framework, a reconceptualization of recognition justice, and the hidden morality heuristic. This dissertation stresses the importance of acknowledging normative uncertainty in energy decision-making, the need for justification of normative claims, and the importance of a critical dialogue on energy justice in academia and society, to help guide decision-making towards more just energy storage systems.

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