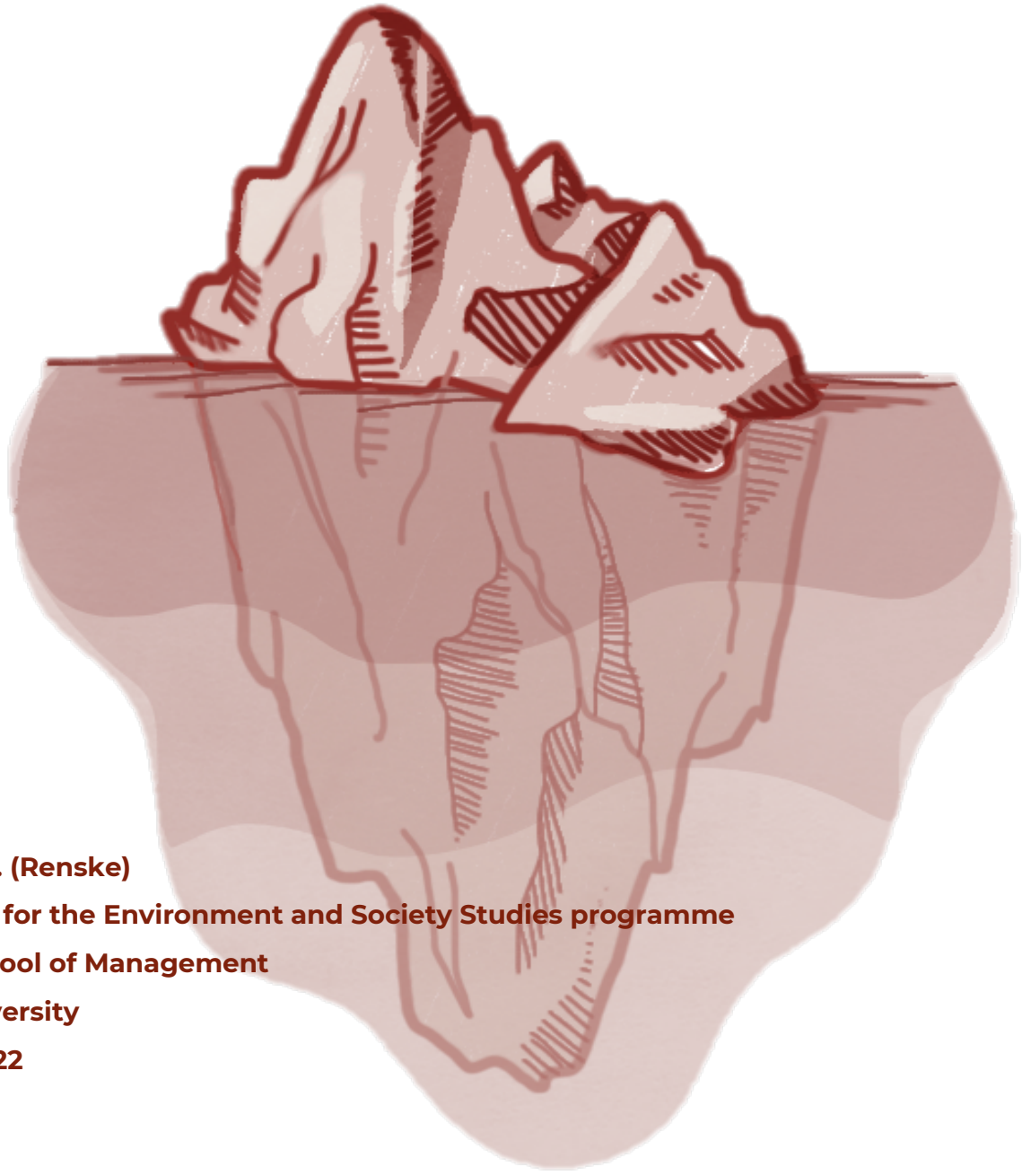
CHANGING THE THERMOSTAT, BUT WHY?

a causal layered analysis to understand the different discourses concerning energy vulnerability and to explore just futures



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Abstract

Within the transition towards clean forms of energy, focus is mostly put on technological and economical rationales. This focus is one of the main causes of energy vulnerability. Energy vulnerability comes in many shapes and sizes, but is in all cases concerned with not having (sufficient) access to energy. Research on energy vulnerability is part of the larger theme of justice and is linked to research on climate justice and vulnerability. There are five different spheres of energy vulnerability: economy, environment, social, politics, and technology. The quantitative content analysis showed that energy vulnerability gained significantly more attention since 2021, and the newspaper articles focused mostly on economic matters, followed by articles on environmental issues. This study aims to explore futures in which energy vulnerability will become a problem of the past. Eight different dominant discourse (economic burdens, economic profits, combating climate change, sustainable living, political system, social inequality, technological optimism, and technological capacities) have been identified, based on the five spheres. These discourses have been analysed with help of the causal layered analysis, a method that tries to unravel the underlying systemic causes and worldviews of the discourse. The eight dominant discourses differ in focus, but some share the same underlying worldviews. Statistical analysis showed that people who adhere to the worldview of universalism are more likely to show environmentally friendly behaviour. Therefore, the dominant discourse of sustainable living, which is concerned with universalism at a deeper level, has therefore been recommended as a starting point to reshape current futures. By adding input from other worldviews and discourse, especially concerning the security value, policies can be created where many people can agree to. When translating these results to recommendations, the ideas of the interviewees concerning just futures have been very helpful. The ideas of the interviewees have been reduced to four major visions for the future: bring people together, decrease inequality, create sustainable awareness, and rethinking politics. These vision fit in with some of the dominant discourses, but more importantly, together the four visions plea for a citizens' assembly. A citizens' assembly is a new form of politics, bringing different people together and where focus can be placed on developing sustainable awareness and decreasing inequality.

key-words: energy vulnerability, justice, dominant discourses, futures approach

Index

Chapter 1 - Introduction

1.1 Introduction

“The need for moving towards low-carbon forms of energy provision is gradually becoming a global policy priority, largely in response to concerns over the deleterious implications of climate change” (Bouzarovski et al., 2017, p.20). Although all around the world there are people who are trying their best to ensure that the energy transition will become a success, the process is hampered. As the innovative and technical progression continues, big steps are being made to move towards a low-carbon energy society. However, many citizens, including Dutch citizens, are experiencing all sorts of social and financial problems that are directly and indirectly related to the energy transition (Clancy et al., 2017; Haarbosch, Kauffman & Veenman, 2021; Middlemiss & Gillard, 2015).

Haarbosch et al. (2021) showed that in Dutch policy documents regarding the energy transition, the focus is mainly on technological and economical futures, rather than social or environmental futures. The authors state that the policy documents have been written with a certain amount of technological and economical optimism, resulting in a mismatch with the narratives of citizens. The narratives of citizens often differ from policymakers in focus points. The exclusion of citizens within the process of the energy transition also increases the chances on mismatches, the authors state: “although it has been stressed that all actors are necessary to participate in the energy transition, in practice, this seems not to go easily, as not all citizens show interest or have the capability to participate” (Haarbosch et al., 2021, p.2).

As many citizens are not participating in the energy transition, their narratives, ideas, and visions are also not incorporated into the policies that are constructed to ensure a successful transition (Haarbosch et al., 2021). Especially the economic and technological futures described in the governmental policy documents can clash with the fears of citizens, such as being afraid of getting financial problems due to rising energy prices. The problems concerning the energy transition are consequences of political choices. For example, subsidies have been granted for using and collecting renewable energies - like driving electric cars and building solar panels on the roof - which can likewise be seen as a natural consequence of holding on to optimistic economic and technological futures. Although these subsidies are understandable, while cleaner sources of energy are used, these subsidies have further widened the gap between the rich and poor in the Netherlands (Vergeer, 2017). Many people lack the necessary levels of financial, but also human capital, to use these kinds of subsidies, resulting in even bigger levels of inequality within a society (Mulder, Dalla Longa & Straver, 2021a).

Most of the problems related to the energy transition are often discussed under the term energy injustice. Energy injustice is a worldwide problem and it is estimated that throughout the world almost 1 billion people – which accounts for 13% of the total population – do not have (sufficient) access to energy (International Energy Agency, 2018). Within the Netherlands, energy injustice is also visible. Although energy vulnerability is not a new problem within Dutch society, the media and political attention towards this energy injustice problem have exponentially grown in the past few months (Mulder, Dalla Longa & Straver, 2021b).

As attention towards energy vulnerability and its consequences has risen, it becomes clear that steps have to be made to tackle the negative effects of the energy transition. This study aims to explore different future pathways towards a more just energy transition, where burdens and benefits are more equally distributed. This aim is to be reached by including narratives and creative ideas of different kinds of people in the analysis. This means that a futures-oriented approach is required to create space for different kinds of futures and thereby radically change how the problem is currently approached. Instead of taking one starting point to further research energy vulnerability, this study will incorporate different ways of knowing and try to link these ways of knowing with different spheres where energy vulnerability is present. Energy vulnerability is a man-made problem, but that also means that there are man-made solutions. Different futures are lurking in the background and it is up to us to choose more social and environment-friendly futures than the ones we are currently walking.

1.2 The case

A recent study showed that seven per cent of the households in the Netherlands - which is 550,000 households in total - are experiencing energy vulnerability (Mulder et al., 2021a). However, with all kinds of global events and the accompanying rising prices of gas and electricity, it is estimated that many more people will experience energy vulnerability than the numbers currently show (Ministerie van Algemene Zaken, 2022b). New estimates show that fifteen per cent of Dutch households, which comes down to 630.000 households in total, experience energy vulnerability in the Netherlands (Weeda, 2022). It cannot be denied that it affects a large part of Dutch society.

Energy vulnerability is a negative consequence of the global energy transition that is currently ongoing, including in the Netherlands (Mulder et al., 2021a). There are different policies in the Netherlands aimed at addressing the energy transition and the also associated problem of energy vulnerability. Many of these policies have a technical-oriented futures approach (Haarbosch et al., 2021); this reliance on technology, as well as on economic development of governments and companies, which is at odds with the ideas residents have concerning the energy transition and energy vulnerability (Haarbosch et al., 2021). When visions of futures do not match problems can arise between politicians and residents.

The Dutch government is by its own constitution obliged to prevent poverty as much as possible (Grondwet, 2018). The high number of people that still experience energy vulnerability, and the fact that the number is rising, show that the current actions and policies are not sufficient. The governmental institutions in the Netherlands have to take further steps to reduce the enduring problems regarding the energy transition. The article by Haarbosch et al. (2021) showed that there are several mismatches between policy articles and people's narratives. As mentioned, technological and economic optimism are one of the biggest mismatches between citizens' narratives and political documents. Moreover, research by Vergeer (2017) shows that policies regarding the energy transition have increased inequality in the Netherlands.

The Netherlands is in the middle of an energy transition, and it is important that this transition will be successful. The use of fossil fuels badly impacts the climate, so cleaner energy sources should become available to make sure that the temperature does not rise more than 1.5 degrees (Buis, 2020). To succeed in the energy transition, it helps to have as many people on board as possible. The current polarisation and the accompanying distrust in the government make it harder to create a strong support base for certain political choices (Wiegman, 2021; NOS, 2022). To build a stronger support base, it is important to explore solutions outside the technical- and economical-oriented futures that are currently followed. Hence, the five different spheres as operationalised by Haarbosch et al. (2021) will be used to explore options for different futures. The different spheres are the economic, environmental, political, social and technological spheres, and will extensively be discussed later on.

1.3 Research aim and questions

Energy vulnerability is a multi-dimensional, complex, and menacing problem. Having not enough access to energy services can have a huge impact on the life and the social practices of a person (Bouzarovski & Petrova, 2015), but also on society itself (Mulder et al., 2021a). Energy vulnerability is not only an environmental or poverty-related question, it impacts and is impacted by different spheres of life (Haarbosch et al., 2021). Solutions for the problem of energy vulnerability in the Netherlands are now often based on short-term thinking, such as the one-off energy payment for people with a minimum income (Ministerie van Sociale Zaken en Werkgelegenheid, 2022). To radically change this short-term, sectoral way of thinking, a futures-oriented approach is needed. Such an approach aims to incorporate different ways of knowing and is futures oriented, which helps to show other kinds of solutions. This study aims to gather different ideas and current practices and investigate how these pieces of information can be related to explore possible options for different futures.

In this study, different approaches will be combined to analyse energy vulnerability. On the one hand, conversations with different stakeholders will be

kept and those will result in a broad palette of opinions, feelings, and possible solutions concerning the theme of energy vulnerability. By interviewing not only the “usual suspects”, such as policy employees but also interviewing other citizens as well, different angles will be incorporated in this study. It is important to hear different kinds of stories because it helps to reveal different sides of the concept of energy vulnerability. However, to enrich the analysis, not only the qualitative data of these interviews will be used, but quantitative sources will also be included. In this study, items from the European Social Survey (ESS) that are concerned with energy usage, climate change, and basic human values according to Schwartz (1992), will be included in the analysis, as well as information that is retrieved from Dutch printed newspaper articles.

The goal of this study is to create futures without people that have to experience vulnerability because of energy consumption. This implies that this study critically examines the current pathways, where the focus is put on economy and technology, and studies whether futures oriented towards more socially and environmentally friendly worldviews might lead to less energy vulnerability. This study will be conducted by using the Causal Layered Analysis (CLA) of Inayatullah (1998). The goal of this approach is to incorporate different ways of knowing and by doing so, create space to construct new and alternative futures. This approach consists of four levels: litany, social causes, discourse/worldview, and myth/metaphor (Inayatullah, 1998). These four levels will help to structure the different kinds of knowledge. The incorporation of different ways of knowing will help to gain a more in-depth perspective of energy vulnerability. Scenarios that are based on different ways of knowing will hopefully decrease the chances of future clashes and mismatches. This leads to the following research question: *What current initiatives or ways of thinking could potentially radically reshape the future way in which energy vulnerability is dealt with?*

To ensure that the analysis will be carried out in a structured way, the four levels of Inayatullah (1998) will be combined with the different spheres that are mentioned in the article of Haarbosch et al. (2021). These spheres are economy, politics, society, technology and environment. Within each level - if possible - energy vulnerability will be discussed in light of these spheres. To help answer the whole research question, the next sub-questions will be researched in this study as well:

I. *In what way is energy vulnerability discussed in Dutch newspaper articles?;*
II. *Which human values - or worldviews - are dominant in the Netherlands, and what can these values tell about social practices concerning energy?;*
III. *What does energy vulnerability, discussed in the light of the different spheres, at the different layers, mean?; and,*
IV. *What different future visions are constructed by citizens concerning energy vulnerability?*

1.4 Relevance

1.4.1 Societal relevance

The purpose of this study is to examine whether there are futures possible in which energy vulnerability belongs to the past. Households that are experiencing energy vulnerability have or may face many different problems that are related to other poverty issues. Experiencing energy vulnerability greatly affects the mental and physical health of people (Van den Broeck, 2020). The negative consequences of the energy transition are not only limited to households, but are currently also felt by small and medium-sized enterprises (SMEs); a quarter of the SMEs in the energy-intensive sectors, such as bakeries or wellness centres, expect to make losses in 2022 due to extremely increased energy prices (MKB-Nederland, 2022). SMEs and households need to be better protected from the negative consequences of the energy transition, and different futures can bring perspectives for these groups.

Furthermore, the Dutch government is, by its own constitution, obliged to prevent poverty as much as possible within its power. The constitution of the Netherlands states that the government must pursue policies that are aimed at achieving certain levels of prosperity and the corresponding equal distribution of this concept (Grondwet, 2018). Since energy vulnerability is related to poverty, the government is obligated to ensure the social security and livelihood of Dutch households. To some extent, this includes the protection of SMEs as they provide work and certain goods, which in its place increases liveability. Energy vulnerability can thus be seen as a societal problem that affects people and SMEs, and requires a national approach. By exploring options for different futures in which the problem of energy vulnerability is solved, this study has a high degree of societal relevance.

1.4.2 Scientific relevance

In this study, three different frameworks will be combined, the different spheres of energy vulnerability by Haarbosch et al. (2021), and the basic human values by Schwartz (1992), will be connected to the causal layered analysis (CLA) by Inayatullah (1998). The “iceberg” of Inayatullah (1998) will be used as the basic framework, this framework will be used to discover the different dominant discourse that can be found within the different spheres of Haarbosch et al. (2021). These dominant discourses that are linked to one of the five spheres shall be discussed, and shall be linked with the basic human values by Schwartz (1992) to explore the worldview level. Combining these three frameworks attributes to the scientific relevance of this study because it has not been done before and therefore contributes to the gathering of new knowledge.

This study has a mixed-method approach as it combines a narrative approach with empirical data (Scheepers, Tobi & Boeije, 2016). By doing so, the more general information concerning energy vulnerability, such as attitudes towards the topic or how energy vulnerability is discussed in newspapers, can be complemented by information derived from the narratives of people. The narrative approach also contributes to the case of energy justice. Haarbosch et al. (2021, p. 2) mention that: "the stories that matter in the creation of energy futures are mostly told by policymakers, front-line activists, scientists, and other highly educated". This study aims to incorporate stories from different kinds of people to create a more holistic understanding of the topic. Furthermore, energy vulnerability, or energy justice, has not been on the research agenda for a long time:

> Energy justice has recently emerged as a new cross-cutting social science research agenda, which seeks to apply justice principles to energy policy, energy production and systems, energy consumption; energy activism, energy security, the energy trilemma, political economy of energy and climate change (Jenkins et al., 2016, p. 175).

In the last few years, a lot of research concerning this theme has been conducted throughout the world. However, there are still gaps in the literature, and a large proportion of Dutch articles are foremostly focused on policies (e.g. Vergeer, 2017; Kruit, 2021; Mulder et al., 2021a). As this study tries to unfold the larger processes that impact energy vulnerability in the Netherlands, and explores what energy justice in the Netherlands means, this study fills in another knowledge gap. Within this study, focus will mostly be on the distributive side of justice, because the emphasis of this study is on exploring possible futures for fairer allocations of goods and bads that are linked to the energy transition (Cook & Hegtveldt, 1983). Finally, the CLA's futures approach contributes to the research field of energy justice, as much research in this field are ex-post analyses with little focus on futures (Haarbosch et al., 2021).

Chapter 2 - Theory

2.1 Literature Review

Problems that are caused by the energy transition differ from each other. There is not a single indicator that can tell us whether someone is at risk of experiencing energy vulnerability. Energy vulnerability rather should be seen and researched as a complex problem, consisting of all different kinds of elements. With a complex problem, there is no one-size-fits-all solution, it is important to keep this in mind.

In the coming sections, the different concepts and theories that try to understand and explain energy vulnerability and -justice will be defined and discussed. First, energy vulnerability will be discussed more broadly. Not only will the concept of energy vulnerability itself be explored, but energy vulnerability will also be positioned in the discourse of environmental justice. Henceforth, the focus is placed on the situation of energy vulnerability in the Netherlands. Thenceforward, to show the intersectionality of the concept, to narrow the focus and keep the study structured, energy vulnerability will be discussed in the context of the five different spheres. The different spheres are based on the existing literature of Haarbosch et al. (2021) and are as follows: economy, environment, social, politics, and technology.

2.1.1 Energy vulnerability in a broader context

Research on energy vulnerability fits well in both fields, environmental justice, and vulnerability. Energy vulnerability is on the one hand a problem that is linked to environmental justice because the goods and bads within the energy transition are not equally distributed. On the other hand, it is also part of vulnerability, because persons or households are at risk of becoming vulnerable due to the energy transition and the accompanying rising prices of energy. More generally speaking, it can be stated that energy vulnerability is part of the field of distributive justice

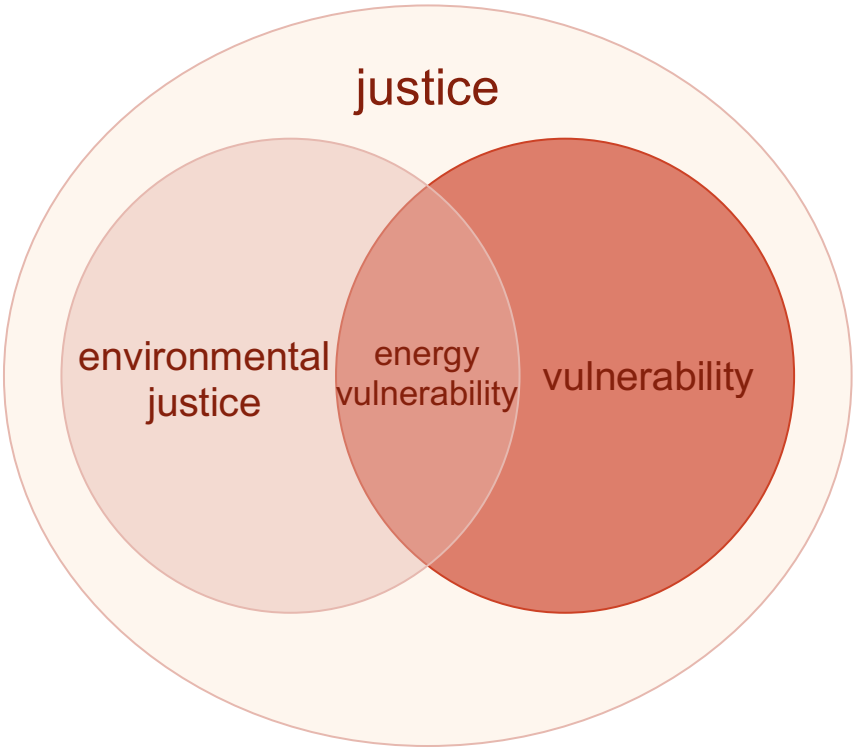


Figure 1. Placing energy vulnerability in a broader context

because energy vulnerability has something to do with the (re-)allocation of goods (and bads) (Cook & Hegtveldt, 1983). Figure 1 shows where the research field of energy vulnerability can be placed.

Note that the positioning of energy vulnerability in the context of justice is in line with the current (western) literature and that it is the conventional way of positioning the concept. However, as the literature that will be discussed in the following parts, is mostly western, and because the focus of this study is mainly on understanding energy vulnerability within the Netherlands, this context description is at this point adequate. Furthermore, placing energy vulnerability in the context of justice ensures a more critical view of the problem. In the following two paragraphs, energy vulnerability will be discussed in light of environmental justice and vulnerability.

2.1.1.1 Environmental justice

Energy justice and vulnerability are an important part of the more overarching concept of discourse called environmental justice (Schlosberg & Collins, 2014). With environmental (in-)justice is meant that environmental risks are not equally distributed by social identities such as race, class, and gender (Mohai, Pellow, & Roberts, 2009). Environmental justice movements also appoint the global unjust distribution of environmental risks. This practically - and oversimplified - means that the environmental 'ills', such as floods and droughts, are mostly felt by people in the Global South, and that environmental 'benefits' are felt by people within the Global North (Schlosberg, 2004). Schlosberg and Collins (2014) said the following at the beginning of the environmental justice movement:

> Many academics and activists trace the beginning of the environmental justice movement to the 1982 protests of the disposal of PCB-tainted soil at a new landfill in Warren County, North Carolina. The resistance to dumping highly toxic waste in a poor, majority African-American community brought together civil rights activists and black political leaders, along with environmentalists, and was the first major action joining civil rights and white campaigners since the 1960s. Some saw the event as the beginning of a 'merger of the environmental and civil rights movements, and publicization of the unlikely coalition helped to spur the development of a national movement (p.360).

Ills and benefits of the energy transition are also not equally distributed. The ills and benefits are not equally spread across the globe, see for instance the case of Shell in Nigeria[1]. However, the good and bads are also not spread equally within

[1] For more than sixty years, the Nigerian government and multinationals, including Shell, have been extracting oil in the Niger Delta. The government and the oil companies have made billions from it, but the majority of the population in the Delta lives in extreme poverty amid oil pollution. Their human rights are violated on a daily basis. Most of the oil is used in Western countries (Amnesty International, n.d.).

countries and communities. Elderly, low-income households and tenants are among others overrepresented in the group of energy-vulnerable people in the Netherlands (van Berkel, Kruit & Dehens, 2021). To help formulate answers and solutions to this problem, it is important to successfully merge ideas and knowledge from not only the environmental field, but the civil rights field as well.

2.1.1.2 Vulnerability

Energy vulnerability is not only part of the concept of environmental justice, but it is also part of the broader concept of vulnerability. Vulnerability is a concept that is used in many disciplines, such as the fields of medicine, environmental studies, economy and sociology (Alwang, Siegel, & Jorgensen, 2001). In all fields, the focus and meaning of the concept differ. However, there are several components that are present throughout all the fields of vulnerability research. Alwang et al. (2001) mention the next components: a) the risk, or risky events, b) the options for managing risk, or the risk responses, and c) the outcome in terms of welfare loss. Every field has a different focus concerning the components, for example: "the economics literature generally conceptualises vulnerability as an *outcome* of a process of household *responses* to *risks*, given a set of underlying conditions" (Alwang et al., 2001, p. 5). There are of course also differences in focus within a certain field of research, but for this study, the more general view of the field of sociology will be used.

Alwang et al., (2001, p.17) appoint that: "many sociologists have adopted the term 'vulnerability' as an alternative means of characterising the dimensions of poverty not ordinarily captured by money-metric measures". The concept of vulnerability is more comprehensive than the concept of poverty because poverty research often only focuses on the "economic vulnerability" of an entity. However, there are more forms of vulnerability, often placed under the denominator of "social vulnerability". Social vulnerability includes having access to human and social capital. These capitals can be very helpful if someone is, or is at risk of, experiencing energy vulnerability. For example, research showed that people that live in a community with more social capital are less likely to experience vulnerability (Fraser & Naquin, 2022); because people have a wider network and within this network, there are often more people that are willing and able to help with certain problems.

Furthermore, vulnerability is a concept that is more fluid and often better applicable than poverty. If someone is at a certain moment not experiencing poverty, it does not mean that they are not vulnerable to experiencing poverty within the upcoming present. Moser & Holland (1998, p.2) define vulnerability as: "the insecurity of the well-being of individuals, households, or communities in the face of a changing environment", this statement illustrates the concept of the fluidity of vulnerability in a welcome matter, because it describes the well-being as well as the environment or circumstances of the subject of research as a variable. This concept of fluidity applies well in the context of energy vulnerability because

the prices of energy can exponentially rise in a really short time frame - as is now the case in the Netherlands (CBS, 2022a) - resulting in a change in the circumstances of a person or household. With unexpected and exponential rising prices, more people are at stake of becoming energy vulnerable.

2.1.2 Understanding energy vulnerability

2.1.2.1 Multidimensional and complex

As many debated concepts, energy vulnerability is also defined in several ways. Some authors, like Middlemiss and Gillard (2015) put more emphasis on the different personal attributes of vulnerability, while others, like Gatto and Busato (2020) define energy vulnerability more as an outcome of system processes. Anyhow, most definitions of energy vulnerability do refer to a certain level of energy consumption that is insufficient to meet various basic needs and fulfil certain practices like cooking and heating or cooling one's house (Gonzáles-Eguino, 2015; Bouzarovski, 2018).

Several studies (Middlemiss & Gillard, 2015; Jenkins et al., 2016; Gatto & Busato, 2020) mention the multi-dimensionality and complexity of the problem. The complexity becomes more clear when looking at the causes and consequences of energy vulnerability. A global study on energy vulnerability (Gatto & Bussato, 2020) showed that the causes and consequences differ throughout regions around the world. For example, the study showed that GDP is not a direct driver of energy vulnerability, rather the degree of energy consumption in a country can be seen as a predictor. This makes the social practices around energy far more important and interesting than some general numbers. However, social practices differ greatly within societies (Shove, Pantzar & Watson, 2012), making practices around energy consumption complex to understand. The complexity of the concept of energy vulnerability has thus something to do with the fact that energy vulnerability is experienced and understood differently at different levels and that it is constructed by multiple drivers.

Energy vulnerability is a multidimensional problem because it impacts several aspects of life (Bouzarovski, 2018). This multidimensionality makes it difficult to capture the concept with one single indicator (TNO, 2020). As mentioned, the concept is constructed by not one, but multiple drivers. To better understand the multidimensionality of the concept, energy vulnerability will thus be discussed in the light of the different spheres as operationalised by Haarbosch et al. (2021): economy, politics, society, technology, and environment.

It can be stated that energy vulnerability is an intersectional and cross-cutting concept, while it has an impact on different aspects of life. Energy vulnerability links to different dimensions and spheres such as the economic, physiological, and socio-cultural spheres (Clancy, Daskalova, Feenstra, & Franceschelli, 2017); but also the environmental, political, and technological

spheres (Haarbosch et al., 2021). Acknowledging that energy vulnerability is a multidimensional and complex problem would therefore be the first step. By dismantling the concept of energy vulnerability into different dimensions, it will be easier to understand why certain processes work the way they do, or why policies are implemented because it will then be researched in a more specific context.

2.1.2.2 Energy vulnerability

After recognizing the multidimensionality and integrality of the concept, further delving into the concept is requested. Energy vulnerability, or energy justice, has thus something to do with an unequal distribution of access to proper levels of energy consumption (International Energy Agency, 2018). However, energy vulnerability is a relative concept, which makes it harder to "measure" and, therefore, often harder to develop general policies (Knill & Tosun, 2020). For example, in the Netherlands, there is something called a poverty line, which means that single or multi-person households who receive less than a certain amount of money, live in poverty (Goderis, van Hulst & Hoff, 2019). This is relatively easy to measure because you are either above or below this income line. However, there is no line that indicates whether you are energy vulnerable or not. Even more, a person can be vulnerable, without already experiencing problems as explained with the help of the article by Alwang et al. (2001). The article by Bouzarovski and Petrova (2015) stresses the same, they emphasise the importance of probabilistic energy vulnerability thinking, which implies that some people or households that are at this moment not experiencing energy vulnerability, can experience this kind of vulnerability in the future, and vice versa.

Certain factors contribute to the degree of energy vulnerability. The most important factors that influence whether households become energy vulnerable are: 1) energy efficiency, 2) institutional factors, 3) low household income, 4) energy needs, 5) high energy prices, and 6) social practices of energy use (Haarbosch et al., 2021). It can therefore be stated that energy vulnerability comes in all different forms and sizes. Middlemiss and Gillard (2015) have defined energy vulnerability as a derivative of research on fuel poverty and vulnerability. According to Legendre & Ricci (2015), fuel poverty is the problem of energy affordability for low-income households in developed countries. It is a serious problem from three main perspectives, namely: poverty, health, and energy efficiency. Fuel poverty is caused by several reasons, which are almost always combined, those causes are low-energy-efficient housing, rising fuel prices, and low incomes. The concept of vulnerability is explained as follows by Middlemiss & Gillard (2015):

> "[Vulnerability research] focuses on the potential for future harm, exploring a person, household or community's likelihood of exposure to harm, sensitivity to that harm and capacity to adapt in response to it. (...) If we build on this work for the concept of energy vulnerability this translates to: the likelihood of a household being subject to fuel poverty, the sensitivity of that household to fuel poverty, and the capacity that household has to adapt to

changes in fuel poverty. Given the dynamic nature of all three of these concepts, it is likely that the energy vulnerability of a given entity (household/ individual/ community) is subject to change over time" (p. 147).

This citation shows that the degree of energy vulnerability of people is likely to change over time, which is also in line with the probabilistic energy vulnerability thinking of Bouzarovski and Petrova (2015). Furthermore, it also shows that there are more drivers than just the affordability of energy because some people are more sensitive to harm than others; social characteristics such as gender and age impact the degree of someone's vulnerability (Clancy et al., 2017). Groves et al. (2020, p.1) mention that:

"Energy vulnerability also includes wider socio-material conditions, such as (for example) whether energy services adequate for its needs are available to a household or poor housing conditions which make households more sensitive to difficulties and less able to adapt to them in ways that sustain their quality of life".

Besides experiencing difficulties with paying energy bills and poor housing conditions, a person can also be energy vulnerable if they cannot participate in the energy transition (Mulder et al., 2021a). Haarbosch et al. (2021, p.2) write:

"Due to rising pricing of energy and governmental taxes to stimulate households to become self-sufficient, there is a group in society who cannot afford to make these investments, or are not the one in charge of making the investments, and pay literally the price of the energy transition".

Mulder et al. (2021a) state that people that cannot participate in the energy transition and are therefore energy vulnerable, do not per definition have a low household income. These people live in a house with poor isolation, but they cannot make their houses more sustainable, because they are either dependent on their landlord or they have insufficient financial strength for large investments within their homes. In summary, the degree of energy vulnerability differs greatly per person due to different factors. Those different factors will be discussed in the following chapters, but first, the focus will be put on the current situation in the Netherlands.

2.1.2.3 Energy vulnerability in the Netherlands

In order to ensure that current issues around energy vulnerability are easier to interpret, it is important to know what kind of society the Netherlands is having. The Netherlands has a participatory society, a society in which everyone is asked to participate. This means that municipalities have gotten more responsibilities concerning the execution of tasks within certain domains (Ham, Bredewold & Kruiter, 2016). To successfully carry out these tasks, the national government made

all different kinds of funding available, including funding for energy vulnerability (Ministerie van Algemene Zaken, 2022a).

Some of the funds that municipalities received concerning energy vulnerability, have to be spent within a certain time frame. In January 2022, Dutch municipalities received money to combat the negative effects of the energy transition[2]. This money has to be spent in a relatively short time frame, otherwise, this money will (partly) be refunded by the national government. Municipalities are struggling with how to invest this money in a way that is effective and just. Research dealing with the financial benefits of climate services showed that within the Netherlands 80 per cent of the benefits are going to the richer households, leaving the poorer households with few (Vergeer, 2017). Haarbosch et al. (2021, p. 13) have come to the same conclusion: "The dominant future policy narrative with its focus on economic future considers mainly the position of higher educated citizens, but does not recognize the position of lower educated citizens, socially-deprived households or households of a different cultural background".

In a recent report of TNO on energy vulnerability in the Netherlands, three key dimensions of the concept of energy vulnerability were defined, those three dimensions are: 1) the affordability of energy; 2) the energetic quality of the house; and, 3) having the possibility and opportunity to participate in the energy transition (Mulder et al., 2021a). The report of TNO is in the Netherlands often used as a guideline for making and implementing policies that are linked to the (social) problems concerning energy vulnerability. The definition that TNO uses is quite technical, and it is, therefore, no surprise that the anticipated futures in Dutch policy documents are technological and economical oriented, as was found in the article of Haarbosch et al. (2021).

The first of the three dimensions is the affordability of the product itself: energy (Mulder et al., 2021a). Energy-vulnerable people often experience difficulty paying their energy bills (Clancy et al., 2017). Although this sounds logical, it does not simply mean that there is a 'poverty line' and that once you earn a certain amount of money you will not experience energy vulnerability. Despite the fact that there are more people or households with a lower income than average, who are experiencing energy vulnerability, there are also households or people with middle incomes that have to deal with energy vulnerability (Mulder et al., 2021a). When someone with an average income spends a relatively large part of their income on energy costs, one is also appointed as energy vulnerable (Mulder et al., 2021a). In the article of Halkos & Gkampoura (2021a) affordability is also mentioned a couple of times as one of the most important drivers of energy vulnerability. The definition of vulnerability by Moser & Holland (1998), where the concept is explained

[2] In January 2022, a total of 150 million euros was divided amongst Dutch municipalities. This money is divided according to the outcomes of the TNO report (Mulder et al., 2021), which means that municipalities receive an amount of money that corresponds with the percentage of households that experience energy poverty in that municipality (Ministerie van Algemene Zaken, 2022a).

as dependent on someone's environment, applies here as well because if energy prices rise the affordability of the product energy becomes lower.

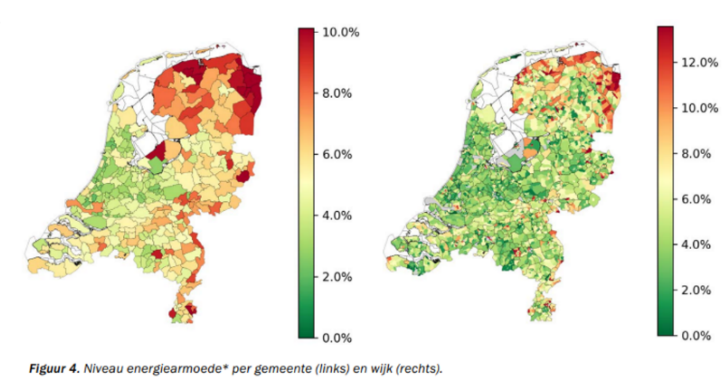
The second dimension is the energetic quality of the house (Mulder et al., 2021a). Houses with poor energetic quality are often uninsulated and the energy label of the house is of low energetic status. The exact definition of energetic quality is not mentioned in the article, the reason, therefore, is that the energetic quality differs much between houses, making it difficult to capture the concept in a comprehensive definition. Besides poor isolation, Bollino & Botti (2017) appoint the link between energy vulnerability and other housing faults, they mention dwelling with leaks, dampness, and rot as some of the most important predictors of someone's risk of energy vulnerability.

The third dimension shows households that live in poorly or moderately insulated houses that they cannot make sustainable by themselves (Mulder et al., 2021a). This third dimension consists of two groups, tenants because they depend on the landlord for making their house sustainable; and homeowners who have insufficient financial strength for large investments in their house, such as solar panels or a heat pump. Mulder et al. (2021a) call this choice poverty. This means that people do not have the option, the choice, to make their houses more sustainable and energy neutral. This group is, mostly because of money restrictions, not able to join the energy transition.

The division into these three indicators is not uncommon. In the article of Halkos & Gkampoura (2021a), the authors explain that energy vulnerability can be measured in three ways, namely: 1) a high share of energy costs, 2) a low available income, and 3) insufficient energy spending. This division is based on the expenditure metrics by Trinomics (Rademaekers et al., 2016) and it shows three different ways how to measure someone's degree of vulnerability. The first one, a high share of energy costs, can be compared with the first dimension of the TNO report: the affordability of energy. The second metric, the low available income is compared with the first as well as the third dimension of Mulder et al. (2021a); it encompasses not only having a little income after the energy expenditures, it also means having too little income to participate in the energy transition. The third metric that Halkos & Gkampoura (2021a) mention is 'insufficient energy spending', this means that the energy costs of a household are less than the minimum level of basic and necessary energy services. Although this metric is not completely applicable to one of the dimensions, it has something to do with the affordability of energy and the energetic quality of the house.

Most Dutch households that experience energy vulnerability are living in a municipality in the province of Zeeland or the northern or (south-)eastern parts of the Netherlands (Mulder et al., 2021a). However, if one zooms in on the neighbourhood level, you can see that the distribution of energy poverty shows a different picture (see Figure 2, adopted from Mulder et al., 2021a). Energy vulnerability, although relatively often present in neighbourhoods in the northern

provinces, exists in all parts of the Netherlands. The spatial distribution of energy poverty differs from the spatial spread of low incomes in the Netherlands, Figure 3 shows that the percentage of people that live in poverty is the highest in urban areas. Energy poverty is thus a form of poverty, but the (spatial) consequences are very different.



Figuur 4. Niveau energiearmoede per gemeente (links) en wijk (rechts).*

Figure 2. Spatial spread of energy vulnerability in the Netherlands

In the report of TNO, it has been estimated that 140,000 households are experiencing hidden energy vulnerability; these are people who, due to financial problems, consume less energy than they would like, but are not included in the figures, because they are not yet experiencing financial troubles concerning their energy payment (Mulder et al., 2021a). The calculation of Mulder et al. (2021a) shows that seven per cent of the households in the Netherlands, which comes down to 550,000 households in total, are experiencing energy poverty. More recent estimates assume that 630.000 households experience energy vulnerability in the Netherlands, which is an increase of almost 15 per cent (Weeda, 2022). It can be stated that energy vulnerability is a growing concern for the liveability of Dutch citizens.

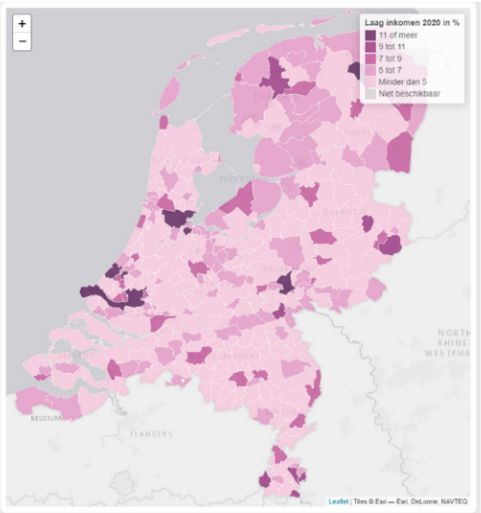


Figure 3. Spatial spread of low incomes in the Netherlands (CBS, 2020)

2.1.3 Energy as a practice

The social and financial problems around the energy transition are impacting the lives of people living in the Netherlands. To understand how these problems have an impact on the personal spheres of citizens, it is interesting to understand more about social practices. To make sense of these social practices, it is important to understand all three elements of a practice: materials, competencies, and meaning (Shove et al., 2012). Within this study, the most important element is meaning, because meaning can tell something about why people carry out a certain social practice. “By participating in some practices but not others, individuals locate themselves within society and in so doing simultaneously reproduce specific schemes and structures of meaning and order” (Shove et al., 2012, p. 44). Unravelling the meaning of social practices helps to unravel the more dominant worldviews. Nonetheless, all three key elements of a social practice will be explained and discussed, because it helps to better understand the concept of meaning, what it is and what it is not.

For most residents, energy and especially energy vulnerability are rather vague concepts. Not everyone is mindful of their energy consumption and not everyone knows "how" energy exactly works. Energy is only the 'material' that ensures that daily practices can be carried out. A practice is defined as a "routinized type of behaviour" (Reckwitz as cited in Shove et al., 2012, p.6). People are the carriers of practices. By understanding practices, one can understand why societies change but also - most of the time - stay practically the same. Practices shape society and if one wants to change certain societal habits, one should try to change the practices of people because the basis of changing behaviour is located in the development of practices. Practice theory is used to help develop answers to complex challenges, like the climate crisis or obesity and it can help by addressing persistent patterns of inequality (Shove et al., 2012).

Energy can also be a part of social practices. Shove and Walker (2014) describe the role of energy in social practices as: "energy is used not for its own sake but as part of and in the course of, accomplishing social practices, examples of which might include cooking, commuting to work, watching TV, or conducting meetings" (p. 47). Bouzarovski and Petrova (2015, p.34) write the following on energy practices:

> At a more fundamental level, energy services are driven by needs, which reflect what the recipients of this system of provision effectively require: a cooked meal, a well lit room, a fast computer with an internet connection, a cold beer, a warm bed, mechanical power for pumping or grinding'. As such, the fulfillment of energy needs is a crucial component of the functioning that enable individuals to perform their everyday life and achieve well-being. But needs are themselves closely conditioned by the social practices that inform the social expectations and settings in which energy use takes place. This is particularly obvious in the case of electricity, whose technical versatility and flexibility has often prompted actors on the supply side to actively manage and produce energy demand. Despite its intractability and vastness, therefore, the entire electricity system can be seen as an element of electricity-consuming social practices, informing what makes sense for householders to do during (and outside) peak periods.

Energy is thus needed to carry out daily social practices. Shove et al. (2012) are dividing social practices into three key elements: materials, competencies, and meaning. Materials are the "things" that make carrying out a social practice possible. A football is an example of a material that helps to fulfil the practice of the game of football. However, energy can also be defined as a material that helps to carry out the practice of cooking or watching television. Shove et al. (2012, p. 19) see materials as "things, technologies, tangible physical entities, and the stuff of which objects are made". It is important to note that you sometimes need more than just one material to carry out a social practice. For example, cooking requires materials such as; food, a cutting board, a pan, some sort of cooking place, and energy.

However, with just the materials, you will not create an edible dish right away, you will need certain skills to prepare the food. This is where the concept of competencies comes in. Competencies are skills or certain types of knowledge that help to successfully carry out a social practice (Shove et al., 2012). Without knowing how to use kitchen appliances, or how to read a recipe, in other words, without having the acquired competencies to cook, you cannot successfully carry out the practice of cooking. When relating competencies to energy practices, one should think of having the ability to isolate your house or manage energy costs.

Besides materials and competencies, you also need the third element, namely meaning. With meaning, the contribution of meaning to a certain action is meant, meanings "include symbolic meanings, ideas, and aspirations" (Shove et al., 2012, p.19). Football is for example not only a game that you play with a ball (the material) and agility (the competence), it also has a meaning to practitioners and to outsiders. Footballers and football fans can derive an important part of their identity from a football club or the game of football itself. These meanings can differ per person, but meanings often adhere to a certain ideology, or worldview or when people have the same frames of reference (Shove et al., 2012).

2.2 Theoretical Framework

The theoretical framework of this study builds further on three different studies. The first one is the study by Haarbosch et al. (2021), which focuses on different spheres concerning energy vulnerability, and is included because it clearly describes the different dimensions of the main topic. The second theory that is selected is the basic human value theory by Schwartz (1992). The different human values can help to understand the Dutch worldviews concerning energy related topics. The third framework that will be used in this analysis is the Causal Layered Analysis by Inayatullah (1998). The goal of this approach is to incorporate different ways of knowing and by doing so, create space to explore new and alternative futures.

First, the theoretical explanation of CLA and the basic human values will be given. Subsequently, the different spheres will be discussed. The spheres will be discussed by using CLA, which means that each sphere will be discussed in the light of the first three layers of the analysis. The first three layers can help to identify the different dominant narratives concerning energy vulnerability. As the fourth level tries to seek solutions, this level is more appropriate for the actual analysis. In addition, the human values that fit within a particular worldview of one of the spheres will also be discussed there.

2.2.1 Causal Layered Analysis

The narratives of people, in combination with other kinds of existing knowledge on energy vulnerability, will be analysed with the help of Causal Layered Analysis (CLA) of Inayatullah (1998). The goal of CLA is to open up the present and past to create space for alternative scenarios and futures, or in this case explore options for these futures. Instead of focusing on the horizontal spatiality of futures, the focus of the CLA is on the vertical dimension of layers of analysis. Figure 4 shows the four different vertical levels represented in the form of an iceberg. This focus ensures that different frames and different sorts of data can be incorporated into the analysis. By doing so, the information that will be derived from this study is more inclusive. CLA puts emphasis on the fact that

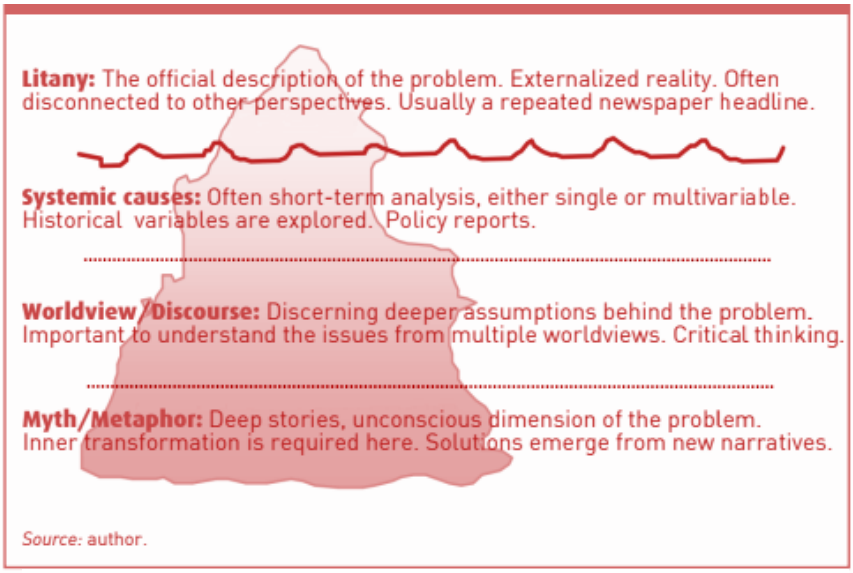


Figure 4. Causal Layered Analysis: The Iceberg Image with Layers (Inyatullah, 2017)

the framing of a certain problem, (indirectly) creates the solution. This complies with the results in the article of Haarbosch et al. (2021), where technological and economical futures, or frames, cause technological and economic solutions. This analysis allows incorporating different frames or spheres, which automatically ensures that other solutions are also considered. In addition, by not only including different frames but also different sorts of data, in this case quantitative and qualitative, the results and information derived from this study will become more extensive and this will create space for different ways of knowing and for different solutions. The different spheres by Haarbosch et al. (2021) will be linked to the different layers of the CLA of Inayatullah (1998). This helps to structure the different kinds of information concerning energy vulnerability.

CLA consists of four different vertical levels, which are litany, social causes, discourse/worldview, and myth/metaphor (Inayatullah, 1998). Inayatullah (2004) defines the four levels and the way of doing this analysis as follows:

> The first level is the litany — the official unquestioned view of reality. The second level is the social causation level, the systemic perspective. The data of the litany is explained and questioned at this second level. The third level is the discourse/worldview. Deeper, unconsciously held ideological, worldview, and discursive assumptions are unpacked at this level. As well, how different stakeholders construct the litany and system is explored. The fourth level is the myth/metaphor, the unconscious emotive dimensions of the issue. The challenge is to conduct research that moves up and down these layers of analysis and thus is inclusive of different ways of knowing. Doing this allows for the creation of authentic alternative futures and integrated transformation. CLA begins and ends by questioning the future (p. 8).

2.2.1.1 Litany

Figure 4 shows that the litany layer is the first layer and the only one ‘above’ the surface. The litany is also defined as the problem level. Belonging to this layer are quantitative trends and problems that are often exaggerated - for political purposes - and are presented by the news media (Inayatullah, 1998). Most of these trends and issues appear discontinuous, and there is not always an overarching concept under which they can be assembled. In the case of energy vulnerability, there are different litanies, or more general: different dominant discourses. Within each sphere as operationalised by Haarbosch et al. (2021), one or two dominant discourses are explained, and the litany will also be discussed there.

2.2.1.2 Systemic causes

After defining the ‘visible’ problem, it is time to unravel the deeper - and hidden - systemic drivers and factors. Time to go below the surface. Within the second level: “the role of the state and other actors and interests is often explored” (Inayatullah,

2004, p.21). The author describes the second level as follows: "The second level is concerned with systemic causes, including social, technological, economic, environmental, political, and historical factors (…) Interpretation is based on quantitative data" (Inayatullah, 2004, p. 17). This means that there are different kinds of causes that (indirectly) influence the problem. Inayatullah (2004, p.27-28) provides a clear example of these different drivers (and underlying worldviews and myths) and how they influence the solutions to a problem, by taking overpopulation as the problem he says:

> "Generally, when overpopulation is considered the problem, the solution is to 'reduce the birth rate' (…) [and] family planning clinics are set up. (…) [However] if we see the problem not as overpopulation but as lack of women's power in the public and private sphere, our solutions become quite different. If we see how patriarchy works to construct women as the nation, the mother of the country, and the repository of men's dreams, then issues of power and social organisation quickly enter the analysis".

This example, where different historical causes for one problem are illustrated, shows that the way a problem is framed influences the solution. It indirectly tells us that incorporating more and different frames, ensures a better description of the different situations and allows us to pick better and more holistic solutions for the problem. To determine which systemic causes are at play, information will be derived from, for example, editorial pieces by policy institutes in newspapers or semi-academic journals. Furthermore, the example also shows us that horizontal layers, such as an economic or social layer, or different historical factors, also improve the richness of the analysis (Inayatullah, 2004). When discussing the five different spheres as operationalised by Haarbosch et al. (2021), the systemic causes can show the relations between a certain sphere to other spheres.

2.2.1.3 Worldviews

The third layer of analysis is the worldview or discourse level; this level fits well in the critical theory paradigm (Inayatullah, 1997). This level is concerned with the deeper assumptions behind a certain problem. According to Keller (2012, p.11), discourse is defined as:

> "a unique and coherent set of central arguments (statements) and assumptions (rules of formation) that together comprise a socially-constituted representation of the world. In other words, discourse is a system for producing, interpreting, framing, knowing, and attributing meaning to reality and truth".

A discourse is a combination of a consistent set of statements and assumptions, and together it is a constructed social representation of the world around (Sijnesael, 2019). It is important to note that a discourse is not constituted

at the individual level or as Inayatullah (2004, p.17) calls it, a discourse is “actor-irrelevant”. However, although a discourse is actor-irrelevant, a single actor - which could be a person, but also an organisation or institution - could use discourses to define their interests. Ideological discourses are “deeply held positions on how the world is and should be” (Inayatullah, 2004, p. 17). Someone who adheres to an ideology of Economism thinks differently about for example capitalism or a free market than someone that adheres to the ideology of Sustainability or Neo-Marxism. So the ideology that someone adheres to impacts their view of the world and can thus be seen as a part of their discourse.

The basic human values as operationalised by Schwartz (1992) fit well in this layer. Corner, Markowitz & Pigeon (2014) define values also as cultural worldviews. Values can be seen as a coherent set of arguments and assumptions, and this shapes the actions of people. Values are also important in predicting engagement with climate change and related issues:

> There are certain clusters of values which are strongly predictive of positive engagement with climate change (in particular, self-transcendent/ altruistic values), and others (self-enhancing values) that appear less congruent with sustained, long-term engagement (Corner et al., 2014, p.4).

Discourses at the civilization level are expressed through worldviews (Inayatullah, 1997). An example of a dominant worldview in the Netherlands is the Western worldview. Within the Western worldview, the autonomy of the individual is an important characteristic (Note, 2006). The Western worldview matches the self-enhancement dimension as defined by Schwartz (2006, p. 10): “[where] the pursuit of one's own interests and relative success and dominance over others [is central]”. However, there are also different discourses at the civilization level that can challenge the dominant discourse. Discourses that are more self-transcendence emphasise concern for the welfare and interests of others (Schwartz, 2006).

The fourth level of discourse is epistemology. Moon and Blackman (2014, p. 1171) describe epistemology as follows:

> “Epistemology is concerned with all aspects of the validity, scope, and methods of acquiring knowledge, such as, with what constitutes a knowledge claim; how knowledge can be produced or acquired; and how the extent of its applicability can be determined. Epistemology is important (..) because it influences how researchers frame their research in their attempt to discover knowledge”

The citation shows that epistemology tells us something about the creation of knowledge. This is important because the way of creating knowledge also impacts the way that knowledge is interpreted (Moon & Blackman, 2014). For example, where objectivist epistemology: “assumes that reality exists independent,

or outside, of the individual mind", which means that the reality lies in the object according to this movement; constructionist epistemology: "rejects the idea that objective 'truth' is waiting to be discovered" and sees "truth" as an outcome of a person their engagement with their world (Moon & Blackman, 2014, p. 1171-1172).

The human values by Schwartz (1992) can be best positioned between the stakeholder and civilization level of worldviews. However, an important argument that is made on deciding what is the "right" level of discourse (or a mix of stakeholder, ideological, civilizational and epistemic) for a certain situation is:

> "It is crucial here to not to be overly fixated on whether one should use stakeholder, ideology, worldview or episteme. *The key at this level is to search for deeper positions that create notions of collective identity* [emphasis added]. Clearly, each of these meta categories would argue that the other is a lesser category, i.e., from an ideological, say a Neo-Marxist view, discourse is but postmodern ideology. From a civilizational view, discourse is part of Western ideology, or from a discursive view, ideology and worldview are but naturalised discourses. Even the notion of episteme is civilizationally based as the order of knowledge and societal stage differs (Islamic and Western classification of historical stages, the modern and pre-modern, for example, are dramatically different). And so forth. *The key is to discern what deeper positions are shaping the systemic and the litany* [emphasis added]" (Inayatullah, 2004, p. 17).

Discourses can thus be seen as deeper structures of belief, and assumptions behind a certain problem. As long as the chosen discourses contribute to rethinking the current paradigm and challenges dominant discourses, it does not matter which type of discourse is chosen. As the emphasised words in the quote show, the key is to recognize and understand the deeper views.

2.2.1.4 Myth and metaphor

The fourth layer, and also the deepest one, is the level of myth or metaphor. This level is concerned with the deep stories, the collective archetypes so to speak. This level is more based on the emotional dimensions of the problem, it focuses more on "touching the heart instead of reading the head" (Inayatullah, 2004, p. 17). Instead of using language to be specific, language is used to evoke visual images, and reactions are often based on emotional responses. An important part of this level is the metaphor. "Particular scenarios have specific assumptions about the nature of time, rationality, and agency" (Inayatullah, 2004, p. 18). This means that, for example, ideas about the future differ between people with other worldviews or ideologies. The example made by Inayatullah (2004, p. 18) to explain the link between worldviews and metaphors is very clarifying:

> conventional metaphors such as a fork in the road, the future as seen through the rearview mirror, or travelling down a rocky stream, rarely make

> sense [outside the West]. Others from Asia and the Pacific see the future as a tree (organic, with roots and with many choices), as a finely woven carpet (with God as the weaver), as a coconut (hard on the outside, soft on the inside) or as being in a car with a blindfolded driver (loss of control).

If the goal is to create different futures, it is wise to deconstruct the current conventional metaphors. To do so, one should know what conventional metaphors are. To understand, and deconstruct these metaphors, it is important to know the other levels as well, because they lead to and from the metaphor. The third layer, which is concerned with the discourses, is the most important one. The conventional discourses help to place the metaphor in the right context. These two layers also fit into the element of the meaning of the Social Practice Theory by Shove et al. (2012). Meaning is the ideas and (symbolic) meanings that an actor contributes to action, or practice so to say. To deconstruct a metaphor it is important to take away its meaning. By deconstructing conventional myths and metaphors, space will be created for alternative futures. "Metaphors and myths not only reveal the deeper civilizational bases for particular futures, but they move the creation/ understanding of the future beyond rational/design efforts" (Inayatullah, 2004, p. 18), so to speak help to bring emotions and the mythic to our ideas of the future, and this is helpful because it is an important, but hidden part of the futures making processes.

> CLA includes this metaphorical dimension and links it with other levels of analysis. It takes as its starting point the assumption that there are different levels of reality and ways of knowing. Individuals, organizations and civilizations see the world from different vantage points — horizontal and vertical (Inayatullah, 2004, p.18).

As the above citation showed, CLA is a theory, and methodology, that moves beyond ordinary ways of framing issues and thereby making a place for alternative futures. There is not one particular level that is more important than another level, Inayatullah (1998, p. 821) states that: "[by] moving up and down layers we can integrate analysis and synthesis, and horizontally we can integrate discourses, ways of knowing and worldviews, thereby increasing the richness of the analysis". This results in different alternative scenarios, which in their way all represent a different way of knowing. This part of the CLA is especially valuable because it allows the researcher to come up with more than just a single answer for the problem. Short-term scenarios differ from scenarios that examine an alternative future or from scenarios that are based on another worldview (Inayatullah, 1998). Focus is now often on short-term policies, and this is one of the opposing narratives between policy documents and citizens, who see short term energy policies as a threat for economic burdens (Haarbosch et al., 2021). Therefore, this layer can help with shaping futures that are more focused on the long term, and not clash with citizens' narratives. This layer will be discussed in the analysis, and will be used to create more practical handles for recommendations for praxis.

2.2.2 Basic human values

The basic human values theory by Schwartz (1992) assumes that human values can be seen as important goals to pursue in the lives of people. People act on the basis of certain values. A certain value can be important to a person, and meaningless to someone else. However, the different values are not culturally dependent and are therefore recognisable for everyone (Schwartz, 1992). Schwartz (2012) specifies six main features of values; they are beliefs, refer to desirable goals that motivate action, values transcend specific actions and situations, they serve as standards, values are ordered by importance, and the relative importance of multiple values guides actions.

All values have these six features, however, they differ in the type of motivation that it expresses. For example, some values focus more on conservation, while others correspond to change. Schwartz (1992) identified ten distinctive human values, and placed them on the circular model of values. The model has a circular shape, to visualise the relations between the values. There are four dimensions that roughly divide the human values: openness to change, self-transcendence, conservation, and self-enhancement (Schwartz, 1992). These dimensions, as well as human values, oppose each other in the circle. For example, universalism opposes power, because the value "Important to be rich, have money and expensive things" conflicts with the value of "Important that people are treated equally and have equal opportunities". On the other hand, values that are close to each other within the circle, partly overlap with each other, as one can see with the items that correspond to tradition or conformity, as "they share the goal of subordinating the self to socially imposed expectations" (Schwartz, 2012, p. 6). Figure 5 shows the positioning of the values and their overarching dimensions, and Table 1 shows the definitions of each value according to Schwartz (2001). Although not all human values will fit into the analysis, they will be discussed for the sake of clarity and to highlight (small) differences between the spheres.

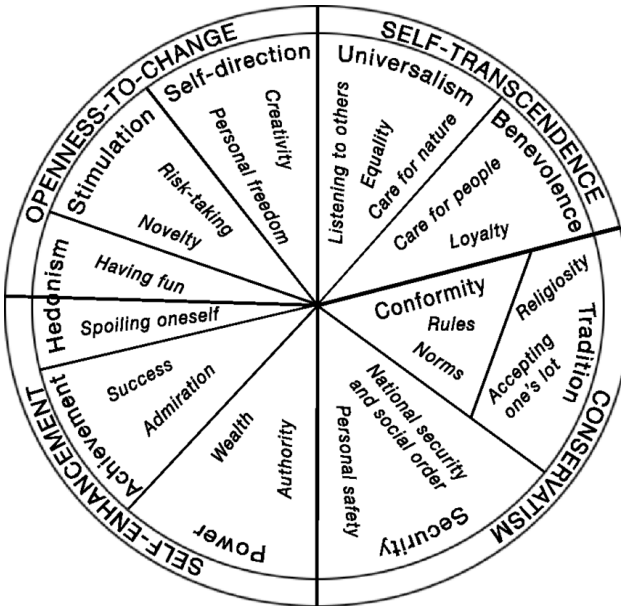


Figure 5. The Basic Human Values Circle (Lucas, 2018, p. 8)

Definitions of 10 Value Constructs in Terms of their Goals and Examples of PVQ Items that Represent Them
POWER: Social status and prestige, control or dominance over people and resources. (They like to be in charge and tell others what to do. They want people to do what they says.)
ACHIEVEMENT: Personal success through demonstrating competence according to social standards.(Being very successful is important to them. They like to stand out and to impress other people.)
HEDONISM: Pleasure and sensuous gratification for oneself. (They really want to enjoy life. Having a good time is very important to them.)
STIMULATION: Excitement, novelty, and challenge in life. (They look for adventures and likes to take risks. They want to have an exciting life.)
SELF-DIRECTION: Independent thought and action-choosing, creating, exploring. (They think it's important to be interested in things. They are curious and try to understand everything.)
UNIVERSALISM: Understanding, appreciation, tolerance and protection for the welfare of all people and for nature. (They think it is important that every person in the world should be treated equally. They want justice for everybody, even for people they don't know.)
BENEVOLENCE: Preservation and enhancement of the welfare of people with whom one is in frequent personal contact. (They always want to help the people who are close to them. It's very important to them to care for the people they know and like.)
TRADITION: Respect, commitment and acceptance of the customs and ideas that traditional culture or religion provide the self. (They think it is important to do things the way they learned from their family. They want to follow their customs and traditions.)
CONFORMITY: Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms. (They believe that people should do what they're told. They think people should follow rules at all times, even when no one is watching.)
SECURITY: Safety, harmony and stability of society, of relationships, and of self. (The safety of their country is very important to them. They want their country to be safe from its enemies.)

Table 1. The different cultural worldviews (based on Schwartz et al. (2001, p. 521))

The human values will be discussed at the worldviews layer of CLA (Inayatullah, 1992). However, this does not mean that these are the only worldviews that shape the narratives around energy vulnerability. To indicate that there are other discourses, worldviews and narratives, the basic human values will be labelled as the dominant discourses in this study.

2.2.2.1 Human values in this study

As Table 1 showed, human values differ in their beliefs and focus, and will therefore also differ in their views concerning energy justice. The goal of including the human values in this study is to better understand the different worldviews and their relation with energy justice. Although all values can tell us something about energy vulnerability, only the most relevant ones will be further explored. In this

case, relevant means having a link with one of the different spheres as mentioned by Haarbosch et al. (2021). The matching human values will be discussed in combination with the different spheres. Human values are values that are important to a person, these values differ, but are understood throughout society (Schwartz, 1992). Human values explain social and personal behaviour, and are hence linked to politics.

Concerning the Dutch political system, since 2002 the largest party in the House of Representatives in the Netherlands has been either a conservative or a right-wing political party; since then, there have been cabinets in which left-wing or progressive parties have participated, but these parties have never been the largest (Ministerie van Algemene Zaken, 2022c). Research by Caprara et al. (2017) shows that political choices and preferences are linked to human values. The results of the study by Caprara et al. (2017) showed that the three conservation values, as operationalised by Schwartz (1992), security, tradition, and conformity, predicted a preference for right and conservative ideology, as well as the values of power and stimulation; the values of universalism and hedonism predicted a preference for left and liberal ideology. Furthermore, the study also showed that the preference toward a "left" (or liberal) or "right" (or conservative) ideology correlated with voting for a left- or right-wing political party (Capara et al., 2017).

2.2.2.2 Operationalisation of the values

In the European Social Survey (ESS) 21 items are included that measure human values. Each value consists of different items that measure how people correspond to the value. Within this study, the human values of the ESS dataset will be operationalised in accordance with the article by Schwartz, Breyer & Danner (2015), the operationalisation can be found in appendix A.

2.2.3 The Different Spheres

To unravel the narratives around energy vulnerability and to understand the complexity of the concept, energy vulnerability will be discussed in the light of the different spheres. By discussing energy vulnerability from different perspectives, a more diverse and comprehensive picture can be defined. By using different perspectives, different ways of knowing are already incorporated into the analysis.

The spheres are based on the article of Haarbosch et al. (2021), where the authors tried to unravel the narratives of people and policy documents concerning energy vulnerability. The spheres are as follows: the economic sphere, the environmental sphere, the social sphere, the political sphere, and the technological sphere. In the article by Biresselioglu, Demir, Demirbag Kaplan & Solak (2020) these five spheres are also mentioned as both motivators and barriers to the energy transition. For each sphere, the motivators, or the positive side of the story, as well as the barriers or burdens related to energy vulnerability will be discussed.

2.2.3.1 Economic Sphere

With the economic sphere of energy vulnerability, the focus mainly lies on the economic burdens of energy use, primarily due to rising gas and energy prices. Rising prices of energy and gas can lead to problems with the payment of energy bills (Clancy et al., 2017; Bouzarovski & Thomson, 2018). Economic burdens can in this case be seen as the litany. In the most recent *troonrede*, a yearly speech by the king of the Netherlands, the litany of the economic sphere is properly summarised:

> A direct consequence of the war and international sanctions against Russia is that gas, electricity and food have become significantly more expensive. The consequences for individuals, families and businesses are severe. Financial problems lead to more debts, bankruptcies, health problems and child poverty. It is painful that more and more people in the Netherlands are struggling to pay their rent, groceries, healthcare premiums or energy bills (Ministerie van Algemene Zaken, 2022d, p.1).

As the prices of energy and gas are higher than normal, more people will become vulnerable because more people are at risk of experiencing poor energy services (Alwang et al., 2001). Especially people with lower household incomes as they spend relatively more on energy costs than those with higher household incomes (Mulder et al., 2021). As was mentioned in the *troonrede*, the war and accompanying sanctions are seen as an important cause of energy unaffordability, as well as for other financial problems. However, energy vulnerability existed before the start of the war. The energy transition is one of the most important underlying issues, "statistics reveal that [due to the energy transition] energy costs produce a significant financial burden for some households, and require many to confront difficult trade-offs such as 'heat or eat' financial decisions and an increasing likelihood of electric utility disconnection" (Carley & Konisky, 2020). Furthermore, the third systemic cause can be found in the general concept of poverty, as energy vulnerability can be seen as a part of this concept just like menstrual or mobility poverty are part of this concept ('S Jongers, 2022). Although there are also systemic causes that explain poverty, such as political, geographical, or social causes, poverty is in this study a systemic cause on its own. Households or individuals who already experience financial problems are more likely to face energy vulnerability as well (Clancy et al., 2017).

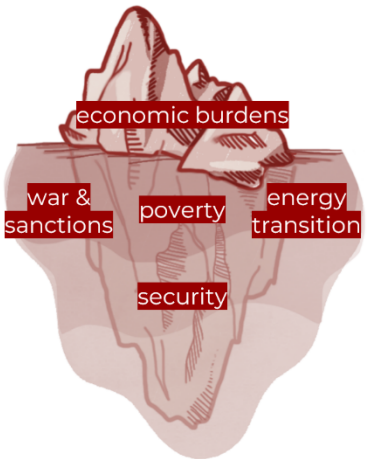


Figure 6. CLA of economic burdens

The dominant worldview that is concerned with this way of thinking is security. The value of security is concerned with stability and safety, which should be promoted by a strong government (Schwartz, 1992). This cultural worldview

stresses the importance of natural security which encompasses being safe from enemies, but also ensuring a stable livelihood without poverty.

There is another dominant economic narrative. For some people, energy is an income source. For instance, companies, but also local owners of initiatives such as solar parks can benefit from rising energy prices, because their profits rise (Vergeer, 2017). The litany of this narrative is that the energy transition can also provide economic profits. Only a small part of society is able to enjoy the profits; in the article by Vergeer (2017) evidence is found that most financial benefits of subsidies and other policy instruments concerning the energy transition are going to households with a higher income than average.

The most important systemic cause of this discourse is capitalism and the accompanying trust in the market; in addition, capitalism also further individualises society (Hodgson, 2015). A consequence of capitalism is the continuing growth of inequality (Hodgson, 2015). For example, households with higher incomes or financially-stable SMEs are more likely to profit in this system. In the article by Haarbosch et al. (2021), it was also found that economic thinking has an influence on policy-making: "Policy documents tend to anticipate futures changes from an economic rationale, which tends to align more clearly with the anticipated futures of higher educated, financially wealthy households" (p.1).

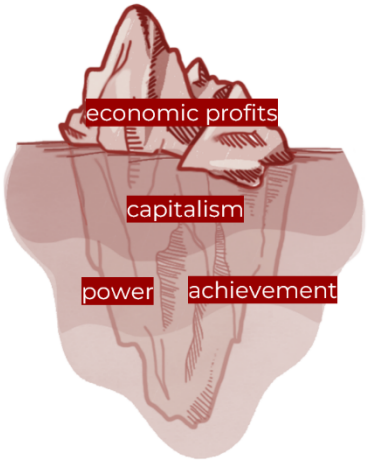


Figure 7. CLA of economic profits

The cultural worldviews that are linked to this discourse are achievement and power. Both values consider it important to generate resources; the focus of achievement is to generate resources to attain certain objectives, while power focuses on generating resources to attain prestige or dominance (Schwartz, 2006).

2.2.3.2 Environmental Sphere

The litany of the environmental discourse is the aim to combat climate change by reducing CO2 emissions. The use of electricity, especially non-renewable energy, results in substantial CO2 emissions (Wood & Newborough, 2003). This means that non-renewable forms of energy have a negative impact on climate change. This negative impact is one of the main cases that a transition towards renewable forms of energy is made. Within industrialised countries, energy usage in houses, such as the operation of most types of domestic appliances like lighting, cooking, and air conditioning, accounts for a significant proportion of the total energy consumption (Wood & Newborough, 2003).

As the energy transition is driven by the idea to reduce fossil fuels and combat climate change, it is no surprise that within Dutch policy documents the environmental future, and in particular a carbon-free environment in 2050, is a

dominant narrative (Haarbosch et al, 2021). Moving towards a low-carbon society has become a global policy priority (Bouzarovski et al., 2017), which also means that Dutch society is bound to combat climate change by among others changing towards a carbon-free society. Global conventions and court decisions ensured that Dutch politics had to reach certain goals within a given time span. These judicial treaties, such as the COP21 in Paris, are important to ensure that goals are actually achieved (Roorda & Beckers, 2015; Balibar, 2017). Although the narrative of a healthy environmental future is dominant, the reasons or discourses behind it differ from each other. While some people or institutions want to invest in a more sustainable society because of moral beliefs, others might as well do it out of fear of the effects of climate change in the future.

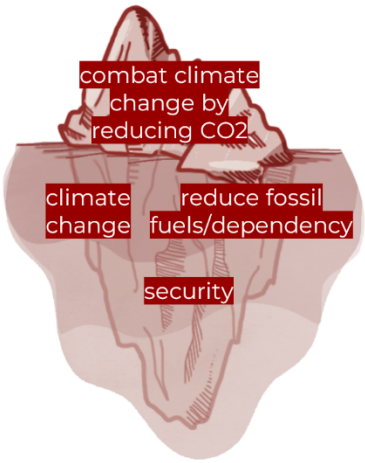


Figure 8. CLA of combating climate change

The human value that explain this rationale is security. The security value is concerned with stability and safety. Combating climate change from this point of view is based on securing a safe living environment for people, in where the negative consequences of climate change, such as sea-level-rise, are not impacting the livelihood of Dutch citizens.

The other environmental discourse is more related to sustainability. For more people sustainability and sustainable living has become more important in daily social life (CBS, 2022b; de Jong et al., 2022). A more holistic form of welfare, *brede welvaart,* has become popular in the Netherlands. *Brede welvaart* is concerned with not only financial welfare, but also with for example social wellbeing and a healthy environment and living sustainable (CBS, 2022b). Another part of this discourse are anti-globalisation sentiments, as globalisation leads to more consumerism, travel-movements and consequently to more energy usage, which negatively impacts the environment (Williams, Meth & Willis, 2014). Concerning energy, this discourse is foremostly focused on limiting energy use because of intrinsic motivation, and wanting to limit negative consequences by adapting one's own lifestyle (Castro & Sen, 2022). In Dutch the term *consuminderen* grows more popular, it implies that people should consume less and, in addition, are more careful with devices that do need to be used, such as central heating systems or fridges (Roorda & Beckers, 2015). Within this discourse, therefore, a link to behavioural change can also be made; to achieve a sustainable lifestyle nationwide, many people will have to change their behaviour (Roorda & Beckers, 2015).

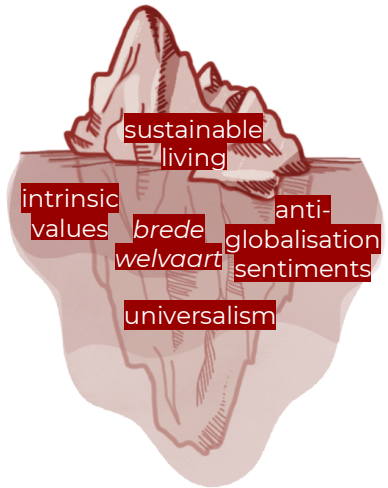


Figure 9. CLA of sustainable living

The deeper worldview that is concerned with this discourse is universalism. Universalist values are concerned with the welfare of nature, and protecting the environment is one of the core goals of this value. Universalism is mostly concerned with combating climate change and investing in a society out of a moral and social point of view. The word “all” is stressed in the explanation of the universalist value (Schwartz, 2006, p.8), and in this case it means that environmental justice is something that should be achieved for people and nature throughout the world, so the benefits and burdens should be equally distributed between people and nature in the Global North and the Global South.

2.2.3.3 Political Sphere

The political sphere is a dimension that overlaps most with other dimensions, because within the political systems policies and regulations that are among others concerned with the topics of energy use and justice are created, and these policies have also impact in for example the social or environmental field. The litany of this sphere is concerned with the (dys-)functioning of the political system in relation to energy vulnerability.

The largest parties in the Dutch House of Representatives have been conservative or right-wing political parties since 2002 (Ministerie van Algemene Zaken, 2022c). This means that these parties have formulated policies and futures for the Dutch society according to their political ideology. The right-wing and conservative parties “emphasize entrepreneurship and the market economy as a means to generate wealth and provide people with the resources to protect their security. It also emphasizes security, limited government, and family and national values" (Caprara, Schwartz, Capanna, Vecchione & Barbaranelli, 2006, p. 9). More practically, this means that people in the Netherlands have become more responsible for their own security and provision of life supplies. These values contrast with the ones of left-wing parties, where favour for the welfare state is expressed, and where the focus is put on pluralism, social justice, and equality (Capara et al., 2006). Emphasis has been put on self-reliance and participation for the last two decades in the Netherlands.

The political environment in itself creates a great deal of uncertainty; there are all kinds of actors involved in the political sphere, and the power of lobbies and interest groups influences politics (Biresselioglu et al., 2020). In addition to lobbies and interest groups, Biresselioglu et al. (2020) mention that the structure of the EU itself is considered a source of uncertainty as well, as all member states are focused on advancing their own interests. These political actors undermine the conviction of small businesses and communities (Biresselioglu et al., 2020).

Besides the political actors that impact the sphere, there are also administrative issues that form barriers in the political field. According to Biresselioglu et al. (2020, p. 8): “administrative barriers result from complications with organizational processes, resource scarcity, mismanagement, transparency

issues, the difficulty of collective decision-making, and intra-organizational conflicts. Lack of quality information, training or expertise, and mismatch of political interests are (..) barriers [as well]".

Another important systemic cause in this sphere is the far-reaching rationalisation as operationalised by Weber, which is present in many Western European countries, including the Netherlands (Ultee, Arts & Flap, 2003). According to Weber, the modernisation of society caused rationalisation: the ordering and systematisation of reality with the aim of making it predictable and controllable and the purposeful deployment of resources to achieve the most efficient and effective results (Ultee et al., 2003). The advantage of rationalisation is that society becomes more manageable and predictable, which often means more efficiency in politics. However, there are downsides to rationalisation, which have impacted energy vulnerability as well. First of all, rationalisation and bureaucratisation go side by side (Ultee et al., 2003). Bureaucratisation delays certain processes and makes it difficult for many people to know exactly where to go with their problems (Siegers, 2017). Additionally, the rationalisation of systems is eventually just executed by people, which cannot exclude matters such as institutional racism. The *toeslagenaffaire*, a Dutch childcare benefits scandal, exposed institutional racism in the Dutch Tax Administration, rationalisation actually led to unfair treatment in this case. The *toeslagenaffaire*, gained a lot of media attention in the Netherlands and has heavenly damaged the institutional confidence of the Dutch people (Wiegman, 2021).

Figure 10. CLA of political system

The damaged trust and numerous application requirements have led to the situation in which a large proportion of people entitled to the energy allowance does not apply for the allowance (NOS, 2022). The process of rationalisation has also impacted the global system. Rationalisation ensured the connectedness between countries around the world (Ultee et al., 2003). These connections are a result of outsourcing, specialisation, and using materials from other countries. One of the consequences of these processes is the current dependency of fossil fuels. This dependency led to rising energy prices due to European sanctions against Russia's aggression in Ukraine.

There is not really a worldview that matches perfectly in this system, as there is not a value that favours dysfunction. However, conformity and traditional values fit probably the most, because these values both stress the importance of "subordinating the self in favour of socially imposed expectations" (Schwartz, 2006, p.7). And people that adhere to these worldviews are perhaps more likely to be okay with, and adhere to the status quo.

2.2.3.4 Social Sphere

When looking at energy vulnerability and the social sphere, the litany is concerned with social inequality. Energy vulnerability has a major impact on the lives of people; the impact differs as some personal characteristics can significantly increase the chances of becoming vulnerable. One of these characteristics is gender, energy vulnerability enlarges the gap between men and women as women are at a greater risk of experiencing energy poverty than men (Clancy et al., 2017). The study showed that there are three interlinked key factors that enlarge the risk for women, those are economic, physiological and socio-cultural causes. In the study it is appointed as follows:

> Economic: e.g. Women with low incomes are disproportionately found as heads of households either as single parent families or, due to their greater longevity than men, living alone at pensionable age. Biological/physiological: e.g. Age is a significant factor in dealing with heat and cold stress, with young children and older people being particularly vulnerable. Women are also considered to be more sensitive to ambient temperature than men. Socio-cultural: women's energy needs and consumption patterns differ compared to men but also among women, factors like marital status and employment influence energy consumption (Clancy et al., 2017, p. 7).

These factors above show the intersectionality of energy vulnerability. Many studies mention the intersectionality of the concept of energy vulnerability (e.g., Harrison & Popke, 2011; Petrova, Gentile, Mäkinen, Bouzarovski, 2013). In this case (Clancy et al., 2017) the disbalance of negative effects of energy vulnerability related to gender is shown, but there are other social categories where this disbalance is experienced as well, like ethnicity (Reamses, 2016) or age (Jessel & Hernández, 2019). To tackle problems that are concerning energy vulnerability, it is important to understand that the impacts of the problem differ for different kinds of people. Bouzarovski and Petrova (2015) mention that, besides personal characteristics, also households with certain socio-demographic circumstances require an above-average amount of energy use. This means that there are certain social aspects and needs that can contribute to someone's dependency on energy and the associated degree of energy vulnerability. According to Bouzarovski and Petrova (2015, p.36):

> "Individuals who spend a greater degree of the day at home (such as pensioners or unemployed people) or have specific energy requirements (including disability or the presence of small children) are more likely to suffer from domestic energy deprivation than the rest of the population".

Personal and household characteristics, or social characteristics, influences the risk of becoming energy vulnerable. The disbalances of the negative effects of energy vulnerability can thus be related to gender (Clancy et al., 2017), ethnicity (Reamses, 2016), unemployment (which affects someone's vulnerability in several

ways) and household characteristics such as the presence of small children or being retired (Bouzarovski & Petrova, 2015). Within the social sphere, the focus is thus on inequalities based on needs and distributions of energy services.

Besides social characteristics such as gender and income, there are also personal and social motivators and barriers (Biresselioglu et al., 2020). Motivators and barriers are personal qualities rather than the more 'assigned' social characteristics that are concerned with demographic and psychological features. Biresselioglu et al. (2020) stress the importance of enthusiastic individuals, people that encourage others to follow energy-efficient solutions, it is one of the best motivators in the energy transition. However, Biresselioglu et al. (2020) also mention personal and social barriers in the process of the energy transition, the results of their qualitative analysis showed that:

Figure 11. CLA of social inequality

> "Lack of interest and involvement turn out to be among the key personal and social barriers. Lack of involvement is attributable to a number of causes. The primary causes emerge as more personal factors including lack of awareness, inertia, and ignorance. (...) The evidence from the interviews and focus groups show that another set of personal and social barriers, such as fear and anxiety, the desire to maintain the status-quo, and resistance to change, pertain to a negative perception of energy transition (p. 8)."

Although these barriers are social barriers, and therefore fit mostly in this sphere, one could also argue that these barriers play a role in the other spheres. A lack of involvement in the energy transition, for instance, often carries over into the political sphere; people do not always see it as a problem that concerns them. In addition, the fear of, or resistance to, trying new things also fits into the technological sphere, where people do not want solar panels on their roofs because they do not understand how they work (Sovacool & Griffiths, 2020).

There are two main and dominant worldviews that are behind this discourse: universalism and benevolence. Universalist values stands for the "protection for the welfare of all people and for nature" (Schwartz, 2006, p.8), besides its link to the environmental sphere, this value is also strongly linked to the social sphere and especially the social inequality discourse. This value is concerned with both the previously mentioned research fields of environmental justice, and vulnerability.

Benevolence is about enhancing the welfare of people that are close to the person which also links to the social sphere (Schwartz, 2006). However, benevolence differs quite a bit from universalism. First of all, no focus is put on the environment. But more importantly, the benevolence value focuses more on the

welfare of the in-group, whereas universalism focuses on the welfare of all people (Schwartz, 2006). In this case, the social problems concerning energy vulnerability are problems that are faced by many people in the Netherlands, including individuals from one's in-group.

2.2.3.5 Technological Sphere

Many governmental institutions believe in technological developments to ensure the success of the energy transition (Haarbosch et al., 2021). The litany of the discourse that concerns the technological sphere in relation to energy vulnerability focuses on technological optimism. This optimism can be seen as the reason why many plans for the energy transition in the Netherlands have a more technical side, such as the investments made in solar- and wind parks. It has been mentioned before that many Dutch policy reports are full of ideas based on trust in technology (Vergeer, 2017; Haarbosch et al., 2021).

The systemic causes of this technological optimism can be found in the trust and power that is given to the markets (Hodgson, 2015), as was discussed earlier in the economic sphere. Freedom and more focus for the market and technological companies has led to further developments in the technological field of the energy transition (Jasanoff & Kim, 2013). The Netherlands is technology based and also tries to attract (high-)tech companies (van de Meer, 2021).

The human value that best fits in this discourse of technological optimism is self-direction. Although it does not fit one-to-one, the value is concerned with independent thought and action, and choosing, creating, exploring (Schwartz, 2006). As technological optimism is also driven by the fact of developing and creating, this value fits best.

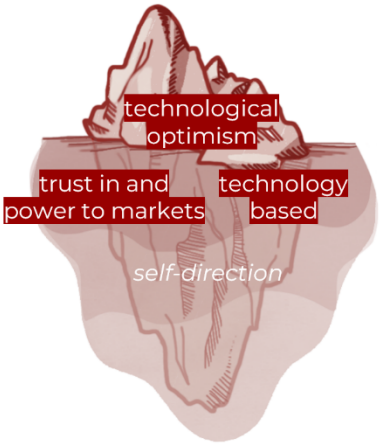


Figure 12. CLA of technological optimism

The other discourse is more focused on the technological capability of citizens. Technological capabilities or skills are partly dependent on cultural norms and values (Biresselioglu et al., 2020; Sovacool & Griffiths, 2020). Ignorance, fear and anxiety are social barriers that negatively impact the energy transition. These personal features can also impact whether or not someone wants to, or has the capability to use more energy-efficient household appliances. The article by Sovacool & Griffiths (2020) discusses the use of various energy-efficient appliances, showing that the operation of many technical devices is not understood or sometimes even clashes with cultural norms. Sovacool & Griffiths (2020, p.7) state that: “no matter how well developed or perfected a given energy technology or energy system becomes in a laboratory, it could have little to no impact without systematic and scientific efforts to ensure such technologies are culturally compatible”.

The other component of this discourse is about inefficient household appliances and the inefficient use of those appliances. This is perfectly summarised in the article by Halkos & Gkampoura (2021b, p.10), they state that:

> A household that is poorly insulated and has energy losses, uses older equipment and domestic appliances, has inefficient heating systems or has damages and leaks, is energy inefficient and is more likely to be energy poor, which shows that a household's energy inefficiency is a potential energy poverty driver. A higher number of rooms can have an impact on the household's ability to keep the dwelling adequately warm. In addition, insufficient information is also important, since the lack of access to the necessary information on how to improve energy related issues (e.g., switch energy suppliers, energy saving, subsidies, etc.) could increase energy poverty levels in households.

This citation shows that the technological sphere is also overlapping with the economic and social dimensions. It is linked to the social and personal sphere because the causes of the lack of access to the necessary information can also be explained as a lack of human and/or social capital (Bourdieu, 2018). On the other hand, the technological sphere is related to the economic sphere, while most households that use older equipment and domestic appliances, cannot afford to buy more efficient and thus more expensive appliances.

Behind this rationale, the security value fits best. As mentioned before, the value of security relates to stability and safety, which should be promoted by a strong government (Schwartz, 1992). This cultural worldview emphasises the importance of natural security which also means having a stable existence in which technological, social, and economical capital is promoted.

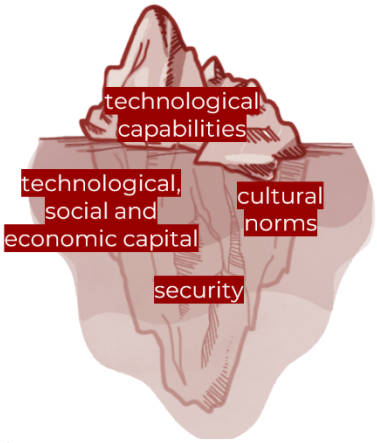


Figure 13. CLA of technological capabilities

2.2.3.6 Operationalisation of the spheres

First, in the economic sphere of energy (vulnerability), positive as well as negative aspects have been mentioned. A large part of this sphere is concerned with the profits and costs of the energy transition. On the one hand, there are "profits made by investments" related to the energy transition, but on the other, there are also costs for households. These "economic burdens" incurred for using household appliances and the heating of a house can be high. With energy bills that are no longer payable, more households face "poverty". There are also various "taxes and subsidies" that either speed up or slow down the process of the energy transition. The distribution of these taxes and subsidies is not always fair. One of the consequences of this is that there is also "inequality in participating" in the transition.

Second, the focus within the environmental sphere is partly on “general sustainable issues” such as more conscious (re)use of products. In addition, the focus is also on using “renewable forms of energy”, as these are less harmful to the environment. Finally, there are “environmental issues” such as water or air quality. The third sphere, politics, is concerned with “administrative issues”, which means that the way of working of an institution hampers the process of the energy transition. Besides institutions, “political actors” and “rules and regulations” can also hamper the process, however, there are also situations in which they can stimulate the process.

The fourth dimension of energy (vulnerability) is the social sphere. This sphere is concerned with “characteristics” of people, such as gender and age, because these characteristics influence someone their degree of vulnerability. Besides these characteristics, also someone's belief, their “personal drivers or barriers” impact the energy transition, while people can act as drivers or as delays of a project. “Household circumstances” such as the presence of children, also influences the degree of vulnerability. The technological sphere, the last dimension, deals with the “technological capacities” of people, and the “trust” that people put in technological development, also known as technological optimism. Table 2 shows the subdimensions and their operationalizations of the different spheres.

Dimensions	**Subdimensions of the Spheres**
Economical	- Profit of investments in the energy field - Taxes and subsidies hinder/stimulate the transition - Economic burdens - Poverty - Inequality in joining transition
Environmental	- General sustainability issues - Renewable/cleaner energy sources - Environmental issues (e.g. air quality)
Political	- Administrative/bureaucratic issues - Political actors that hamper/stimulate the process - Rules and regulations that hamper/stimulate the process
Social	- Characteristics (e.g. gender and age) - Households circumstances (e.g. presence of children, retirement) - Personal barriers/drivers (e.g. seeing the environment as important)
Technological	- Technological capabilities - Trust in technological development

Table 2. Operationalisation of the different spheres

Chapter 3 - Methodology

3.1 Research Method

This research is exploratory because it tries to explore options for different futures concerning energy vulnerability and energy justice. As there is not much pre-existing data concerning narratives on energy vulnerability and their possible futures, and the data collection process is challenging, exploratory research is a sound method. Exploratory research is useful because of the challenging data collection process due to the stigmatisation of poverty, and the absence of a measurable definition of energy vulnerability. It can be difficult for people to talk about their vulnerability because there are still certain stigmas and taboos associated with vulnerability and poverty (Sutton, Pemberton, Fahmy, & Tamiya, 2014). Furthermore, exploratory research is a methodological approach that investigates research questions that have not previously been studied in-depth (George, 2022). Exploratory studies help to better understand the research problem and to gain more insight into the topic, it discovers new areas of research (Scheepers et al., 2016).

To create better and more insight into the subject, several data sources will be incorporated in this study that combines three methodological frameworks. CLA allows the inclusion of not only qualitative but also quantitative data sources. By including both qualitative and quantitative data, different ways of knowing will be present in this study.

3.2 Narrative research

Narrative research is rarely explanatory by nature. In addition to much descriptive research, narrative research often has an emancipatory objective, aimed at giving voice to missing or marginalised stories or at generating new or alternative stories (Sools, 2012, p.27[3]). Frost and Ouellette (2011) describe this form of research as follows:

> Narrative research enables a view and understanding of how individual lives are enmeshed in larger structures; it offers tools to reveal how individuals craft identities and well-being and phenomenological insights to show how systems work to a degree not possible using predominantly quantitative research paradigms (p. 160).

[3] This quote is translated from the Dutch language: “Narratief onderzoek is zelden verklarend van aard. Naast veel beschrijvend onderzoek heeft narratief onderzoek wel vaak een emancipatoire doelstelling, gericht op stem geven aan ontbrekende of gemarginaliseerde verhalen of op het genereren van nieuwe of alternatieve verhalen (Sools, 2012, p.27)”.

The narratives of people will be used to give more depth to the different levels of CLA. As CLA is often used to analyse a broader, more wicked problem, such as housing issues, declining enrolments (Inayatullah, 2004), or energy justice, it can also be applied to narratives and stories of people. The stories of people also have a deeper meaning and there are visible and hidden parts to that story (Dijksterhuis, 2011). The stories that people tell are based on their own beliefs and their interaction with the larger structures that play a role in their world (Dijksterhuis, 2011), Inyatullah (1993) calls these larger structures the systemic causes, which include social, technological, economic, environmental, political, and historical factors.

There are two ways to combine narratives with CLA. The first one is to use CLA to deconstruct the story. However, in this case, the narratives will be used to enrich the CLA. The deconstructed parts of the narratives that are relevant to the research, will be included in the analysis. The inclusion of different parts of a narrative ensures that different ways of knowledge are included in the analysis. The narratives contribute to different pieces of knowledge in two ways; it is qualitative data, and therefore complements the quantitative data well; and, different people with various backgrounds are interviewed, which contributes to more diverse knowledge.

3.2.1 Data collection

By doing a literature review, a more theoretical and general idea of what energy vulnerability is, has been established. As the aim of this research is to gain a better and more detailed insight into what different narratives there are concerning energy vulnerability, interviews will be conducted. Because of the fact that finding respondents is challenging, the snowball sampling method will be used. “The snowball sampling is not only a recruitment strategy but also a selection strategy when researching sensitive topics and hard-to-reach groups” (Scheepers et al., 2016, p. 262[4]).

The idea of the snowball sampling method is to find potential respondents via your own acquaintances. Once respondents are found, they will be asked for new respondents within their network. However, the disadvantage of the snowball sampling method is the representativeness of the research (Scheepers et al., 2016). The sample is not based on chance, because beforehand you choose which people will be in the sample and which will not, this affects representativeness negatively. When the survey is not representative, generalisation to a larger population is difficult. Nevertheless, the snowball sampling method is a useful way to get respondents to a somewhat more difficult issue and the method will therefore be used in this study.

[4] This quote is translated from the Dutch language: “De sneeuwbalsteekproef is niet alleen een wervingsstrategie, maar ook een selectiestrategie wanneer het onderzoek betreft naar gevoelige onderwerpen en moeilijk bereikbare groepen (Scheepers et al., 2016, p. 262)”.

In this research, the snowball sampling method is carried out as follows. In two municipalities within the province of Gelderland, a pilot has started that focuses on developing policies concerning energy vulnerability in collaboration with citizens and social partners. The method that is used within the pilot is called 'De Nieuwe Route', the idea of this method is to prevent more people from getting stuck in the current route of support within the social domain (Siegers, 2017). Nowadays, plans are often made for people instead of for the people who are aware of the situation. As a result, those that have to deal with the problems do not experience that the situation is still theirs, and the loss of ownership leads to disconnections, distance, mistrust, and bureaucracy (Siegers, 2017). The pilots started by connecting with policymakers in the field of sustainability and social well-being within the municipalities. Subsequently, talks were held with different involved parties, such as different welfare organisations or residents. Within these conversations, new parties and persons were mentioned. For this research, the people involved in the pilot were asked if they would also be willing to join in this research. A semi-structured interview guide has been established to ensure that specific information was asked to all interviewees. One of the questions was concerned with the visioning of their 'perfect' future related to the energy transition, so that links could be made with the dominant worldviews, and recommendations for praxis could also be given; furthermore, this question also helps to answer sub question 4. Thereupon, specifying questions were asked to unravel the deeper meaning of the answers of the interviewees. The semi-structured interview guide is added to appendix B.

This snowball method has resulted in five in-depth interviews. Instead of interviewing only the "usual suspects", different people have been asked to think about the problem. The interviewees are: Casper, an artist who specialises in organising arts and culture festivals; Jeroen, a pastor; Marco, a municipal employee in the social domain; Marieke, a mother of two, and expert by experience; and Ysbrand, a municipal policy employee in the field of sustainability and economy. In addition, during a preliminary interview for the other project at the internship site where this research is conducted, a conversation was held with Leo, an active retiree in the community, and three elderly women. Although the latter were conversation and not interviews, interesting information was retrieved and it has therefore been decided to include this information in the analysis as well. As no audio recording was made of these conversations, an interview report was made afterwards.

3.2.2 Data analysis

To extract information from the interviews and the interview reports, the narratives will first be transcribed. A verbatim transcription has been chosen. This choice was made because the advantage of literal transcription, higher accuracy, does not add value to the research objective of this study, because the content is important and not per se the way someone speaks. The data that is retrieved from the interviews,

will be coded with the help of a coding scheme. By establishing a coding scheme, other researchers have the possibility to build further on this study in the future. Within the coding scheme, the focus is put on the operationalisation of the different spheres (Table 2) and the different layers of CLA (litany, systemic causes, worldview/discourses, and myth/metaphor). It is expected that the data derived from the interviews will fit in all dimensions, except the systemic causes. The data will be analysed and structured based on the CLA. This approach consists of four different layers, and the data will be matched with these layers.

3.2.3 Validity and reliability

Validity is about measuring what you intend to measure. Although this sounds logical, many mistakes can be made in this process. To promote validity, it is especially important to look critically at the research design and the measurement instruments that are used (Scheepers et al., 2016). There are several forms of validity, and the most important ones for this instrument will be discussed.

Face validity entails that the instrument that is used to measure, is appropriate for the research purpose (Scheepers et al., 2016). To study the narratives of people concerning energy vulnerability, there is no instrument that can be duplicated because the goal of narrative research is to find personal and therefore new information. Gathering personal information requires more than following a questionnaire, one is bound to ask for explanations and deeper beliefs among others. However, to ensure the face validity of this part as much as possible, a semi-structured questionnaire was drawn up using concepts of the literature review.

Consistency was applied in the data collection process by creating a semi-structured questionnaire. This measurement tool allowed respondents to be asked the same type of questions but left room for creativity and the respondents' own thoughts. In addition, during the interviews, the interviewer did not provide the respondents with additional information to avoid steering the data. Finally, to ensure that the respondents felt the opportunity to share all their thoughts, a safe environment was created prior to each interview and anonymity was ensured. These three components improved the reliability of the research and also contributed to the ecological validity (Scheepers et al., 2016).

3.3 Quantitative research

Two different quantitative data sources have been gathered in this study as well. Existing data from the longitudinal cross-national European Social Survey (ESS) and newspaper articles from the LexisNexis database will be incorporated in the analysis. The collection and analysis method will be discussed per source. Although quantitative data is not necessarily suitable for exploring a topic in more depth, like narrative research is, it is a good tool to retrieve the necessary context information.

3.3.1 European Social Survey

The data of the ESS is publicly available and will be retrieved from the online database[5]. The ESS is a transnational survey conducted across Europe since its creation in 2001; face-to-face interviews are conducted every two years with newly selected cross-sectional samples (ESS, n.d.). For this study, the data from the eighth survey round (ESS8) will be used. The data is collected in the period of August 2016 to December 2017. This dataset will be used because it contains a unique cross-sectional module that is concerned with questions related to the topics of climate change, energy preferences, and energy security (ESS ERIC, 2020). With the help of these data, sub question 2 can be answered.

Besides these unique modules that are only present in ESS8, ESS rounds also contain data that is always present in the survey. This data is concerned with more general social demographics like gender and age, however, there are also questions that are concerned with norms and values, covering the social attitudes and human values of a person. These questions are based on the basic human values as operationalised by Schwartz (1992). This data will help to understand and show which kind of different worldviews there are, by identifying the core values of respondents.

The analyses that will be done with the data of ESS8 will be carried out in the statistical program SPSS. First, the 21 items that measure the circular model of values will be operationalised in correspondence with the article by Schwartz et al. (2015). This means that the 21 items will be aggregated into the different 10 human values: self-direction, stimulation, hedonism, achievement, power, security, conformity, tradition, benevolence, and universalism. A regression analysis will be conducted to see how specific human values correlate with opinions and practices on energy use and climate change. By doing a regression analysis, a link can be made between the litany level and the worldview level. The face validity of the basic human value instrument of Schwartz (1992) is rather high; this research instrument has been validated multiple times in previous studies, which also ensures a high construct validity (Scheepers et al., 2016).

As the CLA has the opportunity to move up and down the different levels, regression analysis with human values and approaches and sentiments on the litany level of energy vulnerability is conducted. One section of the questions is about how worried people are about certain future scenarios, such as power cuts. The other section is about different measures concerning energy use that can be taken to reduce climate change. And the third section is concerned with questions about one's own environmental behaviour. Within the analysis, eight out of ten human values have been included. If all human values would be included, regression coefficients for the values are likely to be inaccurate and uninterruptible

[5] The data can be retrieved via this web address: https://ess-search.nsd.no/en/study/f8e11f55-0c14-4ab3-abde-96d3f14d3c76

due to multicollinearity (Schwartz, 2003). Conformity and stimulation have been removed from the analysis. Conformity is removed because it is close to tradition. Stimulation is removed because it is on the opposite side of conformity in the circle.

Furthermore, two models have been estimated in the regression analysis each time; an 'empty' model, which included the dependent variable and control variables, and a model with these variables and the various human values have been analysed. In this way, it was examined whether the R^2 increases, and thus the proportion of predicted variance increases, when the human values are added. If the R^2 increases by adding the human values, it can be concluded that the human values actually can say something about the dependent variable in question.

3.3.2 Quantitative content analysis

The last data collection method that will be used is quantitative content analysis. Content analysis is a research method used to find patterns in preserved communications (Krippendorff, 2018). A content analysis consists of the systematic analysis of a series of texts, which can be written, spoken or visual, in this case, news articles were chosen. In this study, the aim of this method is to create more background information, which will enrichen the CLA. The focus will be on the descriptive statistics that emerge from this analysis. The news articles that will be included in the analysis will be collected through the database of LexisNexis. The LexisNexis database contains newspapers from the two main Dutch publishers, *DPG Media* and *Mediahuis Nederland*, these publishers together control more than 95% of the total Dutch newspaper offer. With the help of this data, an answer for sub question 1 can be found.

The newspaper articles that will be analysed will be collected through the database of LexisNexis. The search terms that will be used are "*energiearmoede*" and "*energie armoede*". Duplicated articles will be removed from the analysis. Often, certain regional newspapers in the Netherlands place a similar article in their newspaper. For example, an in-depth interview with someone from Zutphen dealing with a high energy bill could be placed in both *Tubantia* and *De Gelderlande*r, because the article is interesting for both audiences. Most regional newspapers are affiliated with DPG Media, which also owns the national newspaper AD, making sharing articles easier. Only printed news articles, from the period from 1 January 2000 to 30 September 2022, in the Netherlands will be added to the analysis. This means that Belgian newspapers, as well as online news articles, are excluded from the analysis. It has been chosen to include only printed newspaper articles, because if online newspapers were also included in the analysis, there would have been too much overlap in the data, which could lead to problems concerning multicollinearity.

To specify whether newspaper articles belong to a specific sphere, extra analyses will be carried out. For example, to investigate whether an article belongs to the economic sphere the following analysis will be conducted, the commands

for this analysis are added to the appendix C; the commands are documented carefully, to ensure that other people can validate the instrument. If an article both mentions energy vulnerability and a term that is concerned with the specific sphere, such as taxes in the economic sphere, there is a hit. It is of course possible that within an article, more than one sphere is mentioned. In that case, the article will be linked to both spheres.

Furthermore, the content validity of this study altogether is relatively high, this is because different methods were used. By incorporating different methods, more than just a singular view on energy vulnerability is included. CLA ensures that different sources and forms of data can be incorporated. By adding qualitative and quantitative data, the coverage of the concept of energy vulnerability is better. Because qualitative and quantitative research were combined in this study, there is triangulation in the form of mixed methods (Scheepers et al., 2016). The combination of three types of research enhances both the 'intern validity' as well as the reliability of the results.

Chapter 4 - Analysis

In this chapter the implementation analysis of this research is set out. First, the interpretation of the quantitative data analyses will be discussed, subsequently this study tries going into depth by using qualitative data.

4.1 Quantitative content analysis

The first layer of CLA, the litany, is concerned with the more visible and "obvious" problems and trends related to energy vulnerability. Within this paragraph, foremostly the quantitative data of the content analysis fits well, as these analyses can help to show the more general perspective of energy vulnerability. As was mentioned before, the estimations by Weeda (2022) showed that within the Netherlands at least 630.000 households are experiencing energy vulnerability. The first analysis showed that although the concept was mentioned sometime before, attention towards the topic increased since the start of 2021. Figure 14 shows that the number of newspaper articles mentioning energy vulnerability has increased significantly[6]. Where there were in 2019 and 2020 31 articles mentioning energy vulnerability, the amount of articles increased towards 550 pieces in 2021, and no less than 873 articles in the first nine months of 2022 The analysis showed that there were 1559 unique hits concerning energy vulnerability.

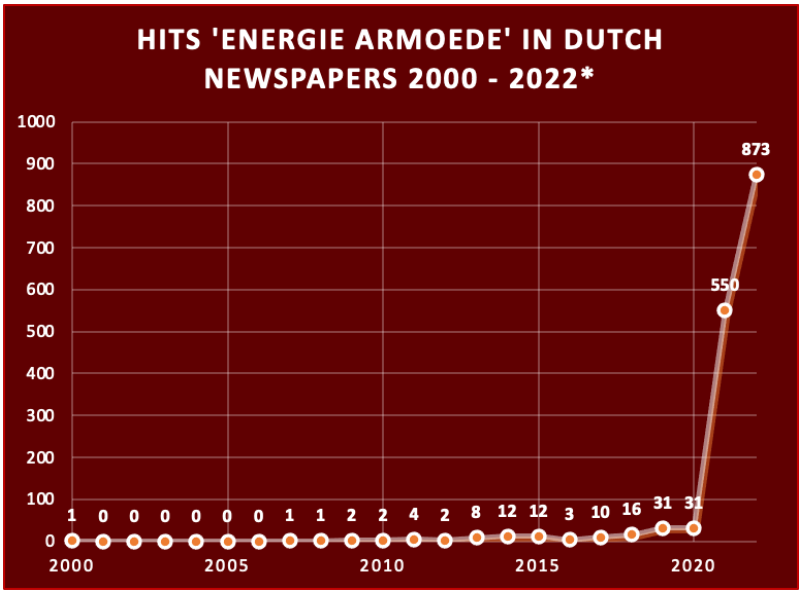


Figure 14. Energy vulnerability in Dutch newspapers [6]

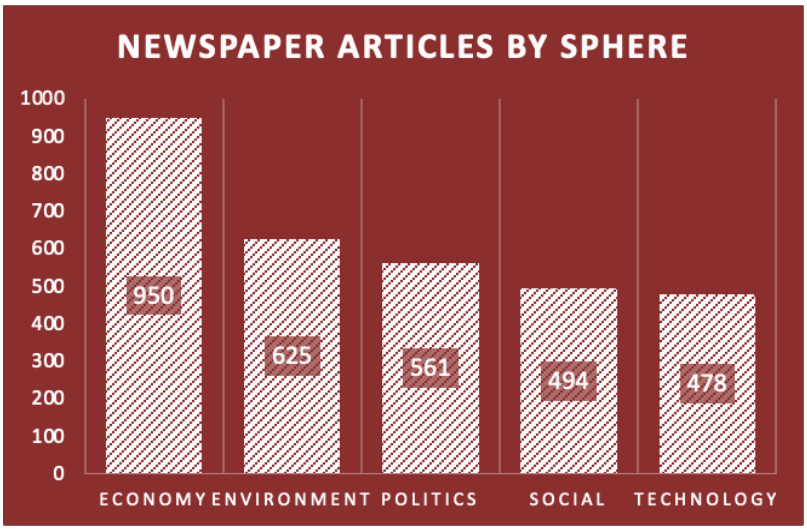


Figure 15. Energy vulnerability by sphere

Energy vulnerability is seen as a problem that impacts different spheres of life (Haarbosch et al., 2021). To figure out how the problem is presented in the

[6] The analysis is conducted on September 30th 2022, which means that the 873 hits in the year 2022 are only from the first nine months. The final number for the year 2022 will be higher than this chart shows.

media, the newspaper articles have been further analysed. This analysis has been conducted by using the same articles by adding extra search terms into the analysis in LexisNexis. This has been done by operationalizing the five different spheres; economy, environment, politics, social, and technology. Each analysis in LexisNexis contained the Dutch terminology for energy vulnerability and had to contain at least one of the terms that are connected to one of the five spheres. A newspaper article can of course belong to more than one sphere. Figure 15 shows the hits per different sphere. As one could see in Figure 15, the analysis showed that most newspaper articles, 950 articles in total, were concerned with the economic sphere. This matches the results of the article of Haarbosch et al. (2021), where most focus was also on the economic sphere.

There are 625 newspaper articles that are concerned with the environmental sphere, which shows that the environmental discourse is also a dominant one in the Dutch newspapers. It is noteworthy that the other spheres are relatively close to each other. Particularly interesting is the fact that 561 articles are still related to the political sphere, as this sphere was not strongly present in the study of Haarbosch et al. (2021). One of the explanations is related to the fact that many of these articles mention something about 'regulations' or refer to a political party. However, this fits well in the CLA of the political system, in which the (dis-)functioning of the political system is discussed, and where the regulations especially match the idea of Weber his rationalisation theory (Ultee et al., 2003).

The social sphere is not extensively discussed in the Dutch newspapers. With 494 hits, the inequality based on housing situation or gender, it is not the most widely discussed topic in the newspapers. Finally, this analysis also shows that there is little coverage of the technological sphere in newspapers. The study by Haarbosch et al. (2021) found that technical optimism is especially common in policy reports, but that citizens often focused on a different, more negative and short-sighted side of technology. It is, however, not a dominant discourse in the newspapers.

4.2 Basic human values

The worldviews that are used in this analysis are based on the human value circle by Schwartz (1992). Schwartz defined ten different values: self-direction, stimulation, hedonism, achievement, power, security, conformity, tradition, benevolence, and universalism. The definition of each value can be found in Table 1. Although each value has a different focus point, the values that are next to each other on the value circle sometimes partly overlap in the ideals.

Human values differ per person. Even more, people also differ in the degree they feel connected to a value. Figure 16 shows the spread of connection to a certain value. Within this figure, the values are arranged by their dimensions. There are four dimensions that roughly divide the human values: openness to change

(the pink values), self-transcendence (the yellow values), conservation (the brown values), and self-enhancement (the ecru values) (Schwartz, 1992). The value of hedonism (the purple colour) does not fit well with one of the dimensions, so on the circle it is placed between the two dimensions of openness to change and self-enhancement.

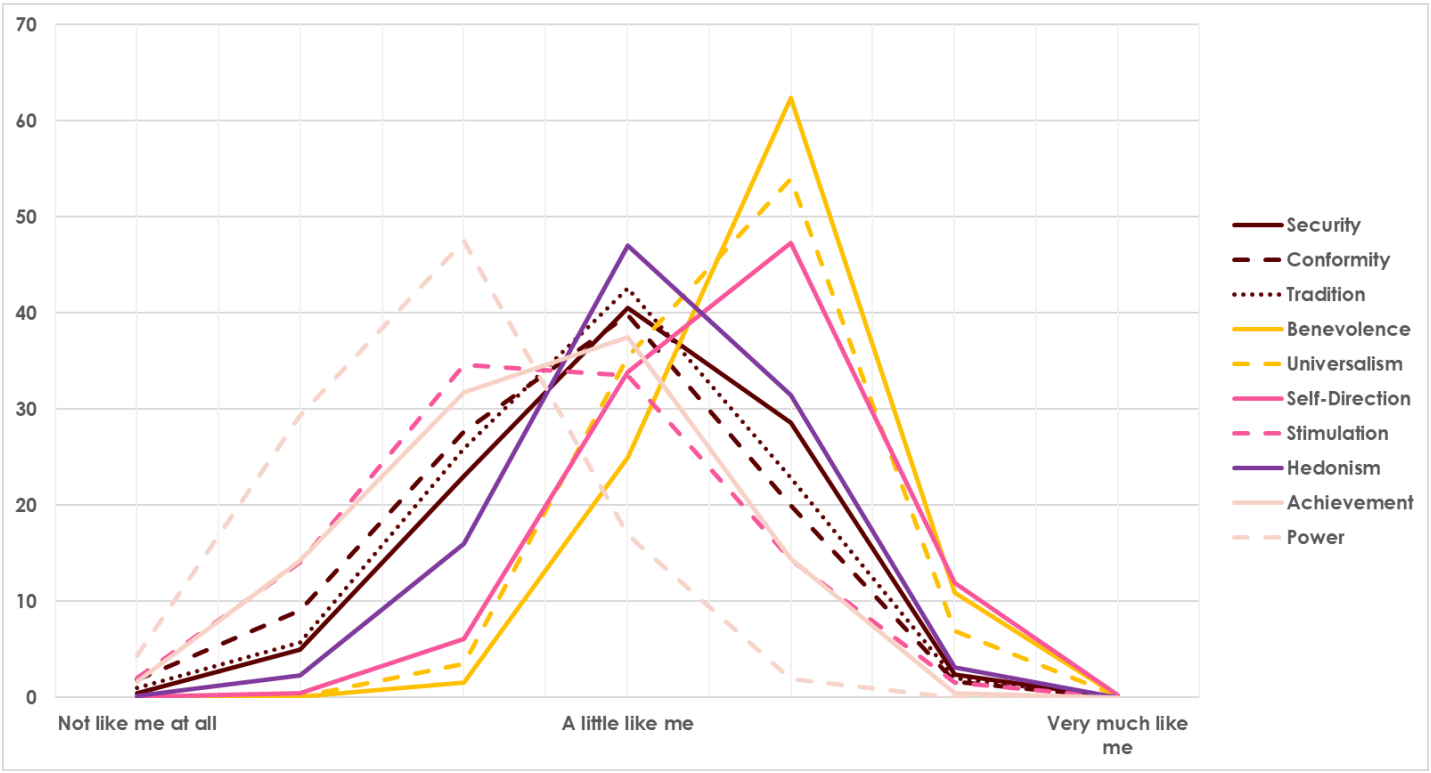


Figure 16. Percentage of people that feels (not) connected to a certain value

As one can see in Figure 16, most people felt more connected to the values that correspond with self-transcendence. Many people can identify with the values of universalism and benevolence. Which also means that people are also likely to be open to types of politics that put more focus on social and, in the case of universalism also on environmental-friendly policies (Thøgersen & Ölander, 2002). The analysis shows that people feel least connected to the self-enhancement dimension, especially not with the power-value. About three-quarters of people do not necessarily think that it is important to be rich, and to get respect from others. Research of Caprara et al. (2017) showed that the power-value is related to right-wing and conservative politics, which matches the current political ideology of the coalition government in the Netherlands (Ministerie van Algemene Zaken, 2022c).

4.2.1 Human values and practices

As mentioned by Shove et al. (2012), energy plays an important part within social practices. In order to see how certain social practices, and especially the meanings of these practices are carried out by different values, a regression analysis has been conducted. By doing this analysis, the more practical side of a human value, becomes more clear. The analysis showed that the degree of worries differs per

human value and per subject (models 1 to 6). When someone adheres to security, they are more likely to worry that energy becomes too expensive for people (B=0,059), and that power cuts will happen in the future (B=0,082); this is understandable, as this value attaches great importance to a stable and safe society. People with universalist ideas are less likely to worry about power cuts (B=-0,100), or that energy becomes too expensive (B=-0,900); however they do worry strongly about climate change (B=0,347), as do people with the human value of achievement (B=0,068). Finally, the control variables show that as you get older, or are a woman, you worry more about all three issues.

When looking at increasing taxes on fossil fuel (model 7 & 8), people with

	Worried that energy is to expensive				**Worried about power cuts**				**Worried about climate change**			
	Model 1		**Model 2**		**Model 3**		**Model 4**		**Model 5**		**Model 6**	
	B	**S.E.**	**B**	**S.E.**	**B**	**S.E.**	**B**	**S.E.**	**B**	**S.E.**	**B**	**S.E.**
Constant	2,188 ***	0,089	2,282 ***	0,097	1,229 ***	0,088	1,314 ***	0,096	2,982 ***	0,091	2,975 ***	0,098
Human Values												
Security			0,059 *	0,029			0,082 **	0,028			0,043	0,029
Tradition			0,006	0,031			0,052 *	0,030			-0,018	0,031
Benevolence			-0,024	0,040			-0,019	0,040			-0,083 *	0,041
Universalism			-0,090 *	0,045			-0,100 *	0,045			0,347 ***	0,046
Self-Direction			-0,066 *	0,035			-0,03	0,034			0,018	0,035
Hedonism			-0,023	0,032			-0,02	0,032			-0,033	0,033
Achievement			-0,009	0,030			0,047	0,030			0,068 *	0,031
Power			-0,086 **	0,033			-0,022	0,033			-0,036	0,033
Control variable												
Age	0,006 ***	0,001	0,005 ***	0,001	0,009 ***	0,001	0,009 ***	0,001	-0,001	0,001	-0,004 ***	0,001
Gender *(ref= female)*	0,186 ***	0,041	0,169 ***	0,042	0,193 ***	0,041	0,202 ***	0,042	0,070 *	0,042	0,043	0,043
R^2		*0,026*		*0,042*		*0,049*		*0,074*		*0,003*		*0,058*

**=p<0,05 ; **=p<0,01 ; ***=p<0,001.*

achievement (B=0.175) and universalism (B=0.475) values are in favour of an increase, and people who adhere to security (B=-0.186) and benevolence (B=-0.114) values are against such policies. It is quite interesting to see that both people with more achieving and people with more universalist values have the same opinion, as they are opposite each other on the human value circle of Schwartz (1992). Concerning the statement whether or not least efficient household appliances should be banned (model 9 & 10), many people do not feel strongly opinionated. However, people with benevolence values (B=-0.142) are opposed to people with universalist values (B=0.324). This result illustrates one of the most important differences between benevolence and universalism, as one is concerned with the welfare of people close to them, and the other is focused on equality for all people and the environment. Women are more in favour of banning inefficient appliances (B=0,199) and of increasing taxes on fossil fuel (B=0,145) than men are.

	In favour of increasing taxes on fossil fuels to reduce climate change.				In favour of a ban sale of least energy efficient household appliances to reduce CC.			
	Model 7		Model 8		Model 9		Model 10	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Constant	3,105 ***	0,133	2,917 ***	0,141	2,865 ***	0,132	2,878 ***	0,144
Human Values								
Security			-0,186 ***	0,042			0,001	0,043
Tradition			0,017	0,045			-0,047	0,046
Benevolence			-0,114 *	0,059			-0,142 **	0,06
Universalism			0,475 ***	0,066			0,324 ***	0,068
Self-Direction			0,05	0,051			-0,019	0,052
Hedonism			-0,036	0,047			0,001	0,048
Achievement			0,175 ***	0,044			0,005	0,045
Power			0,06	0,048			-0,025	0,049
Control variable								
Age	-0,006 ***	0,002	-0,006 ***	0,002	0,004 **	0,002	0,002	0,002
Gender *(ref= female)*	0,081	0,061	0,145 **	0,062	0,211 ***	0,061	0,199 ***	0,063
R^2		*0,009*		*0,082*		*0,011*		*0,036*

**=p<0,05 ; **=p<0,01 ; ***=p<0,001.*

The last questions (model 11 to 14) are concerned with social practices, in this case environmental behaviour The analysis shows that only people with universalist values feel strongly responsible for reducing climate change (B= 0.685) and are more likely to buy efficient household appliances (B= 0.402). The stronger a person feels connected to the human values of security (B=-0.233), tradition (B=-0.183), hedonism (B=-0.241), or power (B=-0.328), the less likely one feels personally responsible to reduce climate change. The likeliness of buying energy-efficient home appliances decreases if people that feel connected to tradition (B=-0.178), benevolence (B=-0.254), hedonism (B=-0.158), achievement (B=-0.251), or power (B=-0.201).

	To what extent do you feel personal responsibility to try to reduce CC?				How likely to buy most efficient household appliances?			
	Model 11		Model 12		Model 13		Model 14	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Constant	5,997 ***	0,251	5,696 ***	0,268	5,550 ***	0,225	5,677 ***	0,243
Human Values								
Security			-0,233 **	0,079			-0,061	0,072
Tradition			-0,183 *	0,085			-0,178 *	0,077
Benevolence			-0,097	0,111			-0,254 **	0,101
Universalism			0,685 ***	0,126			0,402 ***	0,114
Self-Direction			-0,100	0,096			-0,019	0,087
Hedonism			-0,241 **	0,090			-0,158 *	0,081
Achievement			0,084	0,084			-0,251 ***	0,076
Power			-0,328 ***	0,092			-0,201 **	0,083
Control variable								
Age	-0,008 **	0,003	-0,013 ***	0,003	0,028 ***	0,003	0,021 ***	0,003
Gender *(ref= female)*	0,161	0,116	0,104	0,117	0,347 ***	0,104	0,255 **	0,106
R^2		*0,006*		*0,067*		*0,062*		*0,100*

**=p<0,05 ; **=p<0,01 ; ***=p<0,001.*

Thøgersen & Ölander (2002) found evidence for the relationship between universalism and environmental-friendly behaviour. This relationship is also found within this study, as people adhering to universalism are: more likely to buy energy-efficient house appliances, and ban the least efficient ones, feel responsible for reducing climate change, and, in favour of increasing taxes on fossil fuels. However, people that feel connected towards universalism, do not per se worry about certain social scenarios related to energy. The analysis shows that the security value does lead to more worries around the affordability and security of the energy system, as this value focuses on a safe living environment for people, and therefore wants to curb as many negative scenarios (Schwartz, 1992). Finally, it is notable that the achievement value shows some concern for the environment, as they are worried about the effects of climate change, and are pro tax-increment. However, they are not likely to practise environmentally friendly behaviour, as they are less likely to buy the most energy-efficient home appliances.

4.3 The discourses and the narratives

Eight different dominant discourses have been mentioned in the theoretical chapter: economic burdens, economic profits, combating climate change, sustainable living, political system, social inequality, technological optimism, and technological capabilities. These discourses will individually be discussed in the light of the narratives of different people; however, overlap between the discourses will of course also be mentioned. The quantitative content analysis showed that economic discourses are most dominant in Dutch newspapers, followed by environmental discourses. Therefore, the economic and the environmental discourses will first be mentioned. So that it is easier to refer to the most dominant discourses in other discourses, as there will probably be some overlap.

4.3.1 Economic burdens

Energy vulnerability is not only a theoretical concept, but impacts someone's personal life and welfare as well. These two quotes of experts by experiences have been chosen to illustrate the impact of the economic burdens of rising energy prices:

> *In winter, the heating goes to 18 degrees every night. But like now, it's not on in this weather. At night, my boyfriend does feel a bit cold, but then he just puts on a blanket. Luckily I don't get cold easily, I'm a winter person. Yes and for the rest. I moved out 3 months ago and I deliberately didn't buy a gas hob. Just electric. Yes, that kind of thing actually. And yes I do have a car in front of the door, but I take it as little as possible. If I have to go and get some groceries in Elst, that's 10 minutes of cycling, then I just do that by bike. - Marieke, mother of two*

You have to pay very close attention to money, and with groceries being already more expensive too, it's sometimes quite difficult to make ends meet. I already have LED lights and draught strips, and I don't really know what else I can do to bring the costs down structurally. Turning the thermostat even colder isn't really possible, because that would make my bones hurt. - A pensioner in the 'Huiskamer van Elst'

As mentioned in the theoretical chapter, the discourse of economic burdens is concerned with the affordability of energy. The affordability of energy has decreased in the Netherlands, and there have identified three key-causes: the war with Russia, and its accompanying sanctions; general poverty in the Netherlands; and the energy transition. The underlying worldview is based on the value of security, as the aim is to establish a safe and liveable atmosphere, without poverty related issues.

As the quotes above show, the economic burdens of energy impact a persons' livelihood. Many interviewees have mentioned the affordability of energy as one of their key-concerns. However, most focus is put on the larger systems and systemic causes that impact these economic burdens.

Everything is connected to everything: the climate, Russia and gas prices, poverty. So solutions should also not be made with just one focal point, you have to look at the larger systems and in what way things are connected. - Casper

The economic burdens of energy vulnerability is not something that is isolated from other fields, it is part of the more general concept of poverty. For people in a vulnerable situation, it does not matter whether it is the health insurance, energy, or food, that they cannot afford, they simply do not have enough money to support themselves in general living needs. Ysbrand, a policy employee in the field of sustainability and economy of a municipality said that:

I don't see it as a separate thing because the word poverty already says it has something to do with poverty. Whether it's, look I don't care whether it is energy, or having no work, or you name it, it's about poverty and now this is energy poverty and what do you want with poverty: you want to solve that. And from [the field of] *energy we want to solve the energy transition, but those people don't care about that, they want to get out of the situation of poverty. - Ysbrand*

Marco, also a municipal policy officer, but within the social domain mentions the following on the economic burdens of energy vulnerability:

[The causes of energy vulnerability lie] *mainly in poverty. It's tricky, I sometimes speak to experts by experience and they say, "yes, you know, why does this all have to be labelled, menstrual poverty, energy poverty,*

food poverty. It's all poverty". And depending on the deficit you experience in meeting your life's needs, then it gets the label of what you then don't have enough of, and that can be energy. - Marco

These quotes show that this dominant discourse is too focussed on tackling just one part of poverty. 'S Jongers (2022, p.1) mentions "poverty-taylorism" in his article on energy vulnerability: "In poverty-taylorism, the larger structural problem of (impending) poverty is broken down into several manageable poverty problems, each with its own characteristics. (...) Solving that sub-problem should prevent a poverty trap, but in the meantime the structural problem remains underexposed". The author, as well as the interviewees, highlight the importance of focusing on the structural problems that cause energy vulnerability.

4.3.2 Economic profits

The discourse of economic profits has a more positive connotation, as this discourse is focused on making profits from the energy transition. The underlying systemic cause is capitalism, and capitalism is based on trust in the market and also drives further individualisation of the society. The worldviews that match this discourse are power and achievement. However, when looking at the narratives of people, this discourse is mainly perceived negatively. Casper also mentions the negative side of capitalism:

It would be nice if everyone could become energy independent. There is just no drive for this because it would not be profitable. Besides, the lobby of fossil fuel companies is still far too big. - Casper

We were not at all concerned with getting rich or with not having a revenue model. Now I do find that a lot more people are concerned with "what is your status?". (...) Salary has also replaced the question: what do you like? What do you contribute to society? The question, what do you contribute to a society is much more something of my generation, I think. And that you can just be happy, really really happy with a cup of tea, and maybe safety is an important part of that, too. - Jeroen

Jeroen indicates that, in his view, there has been a major shift in what is important to people. He indicates that many people today determine someone's status based on that person's financial wealth rather than the contribution someone makes to society. Later in the conversation, he also denounces the individualisation of society:

You live together, it's not about my career. Or all those cries of "you have to be in your power", or "follow your heart" or something, or "you have to develop yourself", or "become yourself", as if I know who I am haha. And of course I understand what they mean, but that's gone out of control. And I also become who I am because I get to work here, and not be alone, and I

take care of you, and you take care of me. And together we carry each other. (...) Yes, it is also a strange idea; I am free. You are not free at all. You don't have a vegetable garden with everything, I can't take care of myself at all. I think the ideology of individualism is a weird idea. - Jeroen

4.3.3 Combating climate change

The third dominant discourse is related to reducing the negative aspects of climate change. This is a discourse that is both present on the individual as well as the organisational or even national level. The worldviews that are connected to this discourse are security and universalism. The regression analysis showed the differences between these values and their reasons for combating climate change. People with security values are worried that energy becomes too expensive or the happening of power cuts, they want to retain their current livelihood, and do not want to become victims of climate change (Schwartz, 2006). People with more universalist values have a slightly different opinion, as they are especially concerned about climate change and feel personally responsible to reduce climate change. Their reasons for combating climate change are not per se concerned with retaining their livelihood, but foremostly creating a healthy livelihood for nature and the rest of the world (Schwartz, 2006). Within the interviews the discourse of combating climate change has not been mentioned.

4.3.4 Sustainable living

The discourse of sustainable living is focused on intrinsic motivation to combat climate change. This discourse is related to the more holistic idea of welfare, which is not only focused on the status of the economy, but also focuses on a more sustainable lifestyle. Enhancing a sustainable lifestyle is something that the interviewees also appoint. Marieke notes the importance of passing on a healthy earth for the next generation:

Yes sustainability, saving the world, saving the earth, haha yes. I mean I have children of my own who I also wish for a good life on this globe. It has to be a good life and that includes sustainable living. - Marieke

Ysbrand thinks that if people see the advantages of a sustainable lifestyle, people are more likely to take over this lifestyle. He mentions different benefits of sustainability:

Changes should not come as a revolution but as a movement. When people see "hey that's good for me", if they see that sustainability can go hand in hand with more tranquillity, beautiful surroundings, more greenery no longer living in such a hurry, good products from the region, if they see all those benefits; then they will also intrinsically appreciate that I think. - Ysbrand

Sustainable living is something that appeals to a growing amount of people (CBS, 2022b). This discourse promotes the transition towards cleaner energy sources because it is better for the environment, but furthermore also encourages using less energy and revising one's lifestyle because of more holistic and intrinsic values that are concerned with universalism and the human and environmental wellbeing of people (Schwartz, 2006). Behaviour- and consumption change are a big part of this discourse, and if sustainable change is required, focus should be put on those two.

4.3.5 Political system

The dominant discourse of the political sphere is concerned with the operation of the political system. Both damaged trust, and the further rationalisation and bureaucratisation have affected the way energy vulnerability is dealt with in the Netherlands. People have become more responsible for their own security and provision of life supplies under right-wing and conservative politics (Caprara et al., 2006). Since 2002, the largest parties in the Dutch House of Representatives have been conservative or right-wing political parties (Ministerie van Algemene Zaken, 2022c), and emphasis has been put on self-reliance and participation for the last two decades.

One of the consequences of these issues, but also a cause of other developments, is decentralisation to municipalities (Ham et al., 2016). Marco, the policy employee of the social domain, considers the decentralisation in combination with policy making in the field of energy vulnerability not always successful. He says the following about it:

> *How I experience it is: well, the national government says: "here, municipality, there is a national problem, but solve it at the municipal level". Sometimes that's nice, though, because not the whole country needs the same thing. But in the case of energy poverty, I think it's useful to have a central policy. - Marco*

Marco also mentions the pressure of quickly having to spend the money concerning energy vulnerability:

> *True, and also the pressure indeed coming from The Hague* [and municipal government]. *They want you to spend that money as soon as possible. Because yes, it is of course not so nice if your municipality does not spend it all. Because then you are bound to get questions, like why only half of the money has been spent and why X's project has nothing. And then you get* [local] *politics all over you. That is, yes, the haste that I find difficult myself. - Marco*

Leo notes the fact that policies differ in Europe. These differences have an impact on implementing policies and creating support, as frustration arises because some people have to curtail things while others do not:

> *And it is frustrating that you get a subsidy for gas 1 km across the border. - Leo*

The idea of the current political system is mostly founded in traditional and conforming values. These values are concerned with respecting authorities and adhering to the social norms. Changes in this dominant narrative can be achieved by focusing on the political structure of the Netherlands. Especially the damaged trust in political institutions requires attention.

4.3.6 Social inequality

The social inequality discourse focuses on different social characteristics that influence the degree of energy vulnerability. Energy vulnerability is not equally spread in the Netherlands, not physically or socially, and different reasons for this have been mentioned (Mulder et al., 2021a). Energy vulnerability enlarges the gap between the rich and poor (Bouzarovski & Petrova, 2015). Casper illustrates these social inequalities with two quotes:

> *A lot of people are going to get into trouble, really a lot of people. I myself am getting into a lot of trouble with my old house. A large group is going to be disconnected, but a small group continues to use energy. And that group will continue to use it a lot because they can afford it. Inequality will increase, but those people don't care. People with a private house with energy label F are going to be in trouble at least as much as people with social housing. There is a large group that used to make ends meet and now they won't be able to. - Casper*

> *Often, the bigger problems like poverty and climate crisis are not created by those who have to face their problems. You can fly to Marseille for 30 euros and nothing is done about it, but we all have to separate our waste which is then partly shipped to the other side of the world, to be 'destroyed' there. It's just all very skewed. - Casper*

These quotes show that certain social factors are linked to economic burdens and climate burdens as well. The unequal distribution is often based on social characteristics, but impacts different spheres as well. Furthermore, the second quote of Casper shows that social inequality is not only something that is based on social characteristics, it also shows how certain larger systems perpetuate inequality.

Benevolence and universalism are the two main cultural worldviews that concern the discourse of social inequality. The differences between the two

worldviews have been described in the theoretical chapter. When looking at the regressions analysis, model 10 illustrates the different focus of the values. Most people with benevolence value are against banning the least energy efficient appliances, because it financially impacts the livelihood of people. Universalists, however, are pro banning because of environmental perspectives. Nonetheless, both viewpoints are needed to understand the problem, as they together create a better understanding.

4.3.7 Technological optimism

The seventh discourse is concerned with technological optimism, and is often found in Dutch policy papers (Haarbosch et al., 2021). This discourse is based on the idea that technological inventions help to further and faster develop the energy transition. This discourse is also based on a positive rationale, as is the economic profit-discourse, both put trust in the fast developments within markets. According to Leo, the technological side of the transition is not always going as fast as it should go. Although this quote has a negative connotation, it shows technological optimism as it focuses on technological solutions for the energy transition:

> *But it is also more of a technical problem because certain steps have not yet been made, such as storing green-generated energy. - Leo*

However, within this discourse blinders are present for other developments in different fields. Ysbrand, a policy employee in the field of economy and sustainability mentions the following about technological optimism:

> *Society expects more and more from people ánd we rely more and more on technology, and in fact, this makes us more and more distant from the planet, which is also the case with sustainability. When we have ticked all the boxes, we are happy. Oh, yippee we met the CO2 target, but on the other hand, I see them all chopping down trees in the city, and then they say: "yes, those trees have already absorbed enough CO2 for our target". - Ysbrand*

In addition to showing technological optimism within organisations, or in this case a municipality, this quote also shows that there is still a lot of sectoral thinking and as a result, the bigger picture is sometimes overlooked. Technological optimism, foremostly rooted in the human value of self-direction, is seen as a good driver for technological developments (Haarbosch et al., 2021), but seems to lack the bird's-eye view.

4.3.8 Technological capabilities

This last dominant discourse focuses on the technological capabilities, but also the number of options of people. This discourse acknowledges that capacities and opportunities differ due to social characteristics, and is therefore also linked to the discourse of social inequality (§4.3.6). None of the interviewees mentioned

technological capabilities. However, the analysis with the human values did show that older people, women, and people with universalist values are significantly more likely to buy efficient home appliances. A high proportion of people from these groups probably have high levels of technological and/or human capital.

4.4 Metaphor and recommendations

By asking interviewees what they would do if they were in charge, or how they would see the future, they are envisioning different futures. The deepest side of their stories and the more emotional feelings that are concerned with the theme of energy vulnerability come to the surface. The answers of the interviewees help to envision futures and will thus help to understand the fourth layer of the CLA. The fourth layer is concerned with myths and metaphors. MacGill (2015) explains the importance of this level as follows:

> "Myth and metaphor constellates into a worldview that drives the systemic layer and then the litany of our lives. While our worldview enables us to create effective cultures, they form in ways that tend to preclude other ways of seeing the world. CLA cleverly accesses the myth/metaphor layer to reframe the way it has been constructed, thus becoming a powerful practical tool to recognise canalisation into the culture trap of restrictive futures and then reveal previously unconsidered possible alternatives for more fruitful, meaningful futures" (p. 63).

This quote shows that new futures can be created at this level. Instead of the current focus on technological and economic development, input from the interviews will be used to look at what futures might ensure a more social and environmental, or universalist, future. Furthermore, this level also allows one to look for recommendations for praxis. Visualising futures starts with envisioning an end goal, in this case how futures without negative consequences of the energy transition should look. These futures can be explored by the Framework for Strategic Sustainable Development (FSSD) by Broman and Robèrt (2017), the framework helps to set stepwise goals through backcasting. The FSSD starts with a vision and compiles achievable steps that help to reach the vision. Four different visions and recommended steps to achieve these visions will be discussed.

Vision I - bring people together

From the visions and focal points of the interviewees steps will be derived to set stepwise goals towards sustainable futures concerning the energy transition. The focal points of the interviewees differ but also show a certain overlap. Creating meaningful contact is one of these focal points in which several people agree. Jeroen mentions that is important to organise meetings between different people:

> *I don't get outside my own bubble that much anymore. But that's one of my small goals, big goals actually, bringing people together. (...) There's also*

the Alzheimer's cafe here, where you see: I can get Alzheimer's, you can get it, rich and poor, it's mainly intended for spouses and this is one of the few groups with rich and poor people together. They are in the same situation, and they are not, but they are talking to each other. The hospital or the GP's waiting room, those are just the last few places where people all sit together. - Jeroen

One of the main reasons for bringing people together is the far-reaching polarisation that exists in Dutch society; different population groups are no longer in touch with each other and certain public debates have hardened. (de Jong et al., 2022). Places like the Alzheimer's cafe are good venues to foster new contacts, but Casper sees another solution:

I would invest a lot in arts and culture festivals. Our world is polarising: arts and culture festivals are really the only places left where everyone comes together. They are places where people connect with each other. - Casper

Investing in culture and arts, and especially in festivals where meeting new people is possible, is according to Casper the way to go. Many problems, he says, come from the increasing inequalities within society and the linked polarisation to it. He sees art and culture as a method to show people societal problems (*The aim is to evoke people, also to make people aware of the nature around them - Casper)* such as poverty or climate change, but also to directly tackle social problems, such as polarisation by breaking bubbles and ensuring contacts. Creating contact between people is thus seen as an important prerequisite to solve social problems, because it encourages different kinds of conversations. This vision does not per se link to one of the dominant discourses as operationalised in this study, however, as mentioned before, CLA allows to look deeper into a problem and therefore also encourages to come up with outside the box solutions.

Vision II - decrease inequality

Furthermore, the growing financial inequality is also mentioned as a problem that concerns energy vulnerability. Tackling inequality links to both the dominant discourses of economic burdens (§4.3.1) and social inequality (§4.3.6):

Look that some are slightly richer than others, that's all fine by me. You also need entrepreneurs who stick their necks out, but I find the difference between rich and poor really absurd. I also find it completely unchristian from my spiritual point of view. A Muslim would say exactly the same thing. It really has grown so skewed in the last 20 years that it is no longer socially sustainable either. If it were up to me, I would have addressed this much earlier. Healthcare too. The middle-income earners who do very important work. Those have actually been underfunded for the past 20 years to spend properly. Again, you also have good rich people. But the fact that

companies can make so much profit is very crazy. Also that they don't have to pay taxes, I had already cracked down on that. - Jeroen

Marco also acknowledges this inequality as a problem that impacts energy vulnerability. Income inequality, and many other forms of inequality as well, have risen in the Netherlands (de Jong et al., 2022). Instead of adding even more rules and support packages to help people, he indicates that the social system should be made more accessible, and proposes the next steps:

See if you can alleviate existing regulations. Reduce taxes and make it easier for certain groups to organise remission. - Marco

Within this way of thinking, the idea of a basic income would also fit, as it definitely alleviates existing regulations (Betkó et al., 2022). Instead of only thinking in larger systems, Marieke thinks it is also important for people to look more after their loved ones and other people as well. She does not think that only the government is responsible for a good society, and for decreasing inequality, but that one should also look after each other as residents, as an achievable step she mentions the food pantry initiative:

Like those cabinets where food is put in. So that people who need it can just grab it without being seen. (...) It's a bit the same principle as the mini library. There is also a cabinet at the house and books are put in there for people who no longer use them and people who want to read them, they can get something out of it. - Marieke

Vision III - create sustainable awareness

Marieke focuses also on the natural environment. She says that it is important to show young people what nature has to offer and that it is crucial to make them aware of the environment:

*Then again, I immediately think of young people. That in a way, with the money [*that has become available to tackle energy poverty*], you could show them what you can do outside in nature. So that you use the money to let them enjoy nature. And also to show what could happen if you are inefficient with our energy and our world. A bit of that kind of awareness. - Marieke*

Creating awareness and intrinsic value for the environment, is something that Ysbrand finds important as well:

Yes, so the intrinsic idea of sustainability is there with me because it gives me benefits. I'm not so stressed and so rushed anymore. (...) I also want you to be able to see it [sustainability]*, for people to see: hey it's really improving and also feel that it's improving. Not only on paper but also In real life. - Ysbrand*

These visions fit well in the dominant discourse of sustainable living (§4.3.4). Possible steps that have been mentioned in this discourse are focusing on broader measurements of welfare, and on consuming differently than is currently normal. Consuming less, focusing on reusing and recycling, and showing the benefits of nature are attainable steps.

Vision IV - rethinking politics

Lastly, it is striking that several interviewees mention that the current way of doing politics no longer works according to them. They say that there is far too little focus on long-term policies and planning and that it should be wise to rethink the system:

> *Because I also think democracy is a bit towards its end. You have to make policies for at least 8-10 years and politicians are always there for 3 or 4 years. And that system no longer works. I once had a whole conversation with the councillor on housing and public housing. And he said to me: "Jeroen, I have to plan 10 years in advance where houses are going to be. And whether it's for families or it's for single households. That's how long it takes one to plan in advance. And then all at once, another one comes along. And that one puts a line through it". - Jeroen*

> *The government's job is to invest in the future, for example, by investing and making studying accessible, currently this is not happening, so we can actually speak of a government in poverty, the government also has a reptilian brain[7]. Far too many short-term measures are being implemented. - Casper*

> *Jeez. I would look for solutions that are more structural as well as practical and feasible, that are useful to people. (...) I would connect as much as possible with the people affected, the residents affected. Long-term and not just throwing money around. - Marco*

A "government in poverty" illustrates that poverty impacts long term decision making, as people in poverty can only focus on short term goals and are unknowingly ignoring the long view (Shah, Mullainathan & Shafir, 2012). The visioning of a new political system fits well in the political system discourse (§4.3.5). Marco also mentions that concerning energy vulnerability, it would be better if certain policies were made on the national level instead of the regional, or governmental level:

> *I have already seen arrangements whereby municipalities are consulted, also in the preparations, so that would seem like a good possibility to me.*

[7] The reptilian brain is the oldest and most instinctive part of the brain. It regulates primary instincts such as reproduction, survival, stress and fear and forms an important part of the subconscious system (MacLean, 1990).

That the central government does something or perhaps develops something and then asks municipalities to respond. - Marco

Decentralisation has led to more tasks for municipalities and this is not always helpful for the process (Ham et al., 2016). Marco mentions that it probably would be more functional to tackle problems that concern citizens through all parts of the Netherlands, at a national level. There are different problems concerning the political system and changing the whole system itself is difficult, however Casper does see a different role for the government, which would not require drastic change:

The government can take on the role of connector, by this I mean that the government is in a position to bring residents and companies or investors together. Investors could then, for example, invest in solar panels on rooftops in poorer neighbourhoods. - Casper

Chapter 5 - Conclusions & Discussion

5.1 Conclusion

The aim of this study was to gather different stories and current practices around energy vulnerability, and explore the associated possibilities for different futures. In order to achieve this, different analyses have been conducted. Firstly, a qualitative content analysis with Dutch printed news articles was executed. The goal of this analysis was to determine in what way energy vulnerability is discussed in the Dutch mainstream media. The results showed that the topic gained significantly more attention since 2021. Furthermore, the results revealed that the focus of most articles was by far on economic matters. Environmental issues was the second largest subject. Technology or technological optimism, one of the most present narratives in policy documents (Haarbosch et al., 2021), had the least newspaper article hits.

The second analysis focused on the human values of Schwartz (1992). Human values have been treated as the dominant worldview in this study, the goal of this analysis was to see how certain practices and opinions concerning energy usage related to certain worldviews. First, the descriptive statistics concerning the values were requested. The results showed that in the Netherlands many people identify with the self-transcendence values, and with the value of self-direction; people identified least with the power-value. Concerning the social practices and opinions, diverse results came to surface. People with universalist values showed the most environmentally friendly behaviour, followed in some situations by, surprisingly, people with achievement values. However, although many people in the Netherlands feel connected to universalism, not all do. To shape just futures that many people can relate to, one should not be blind for additions from other worldviews. Power values oppose universalism and are therefore not contributing, in addition, not many Dutch people feel connected to power. However, the values close to power can contribute, and relate to people that not feel connected to universalism. People who adhere to security and benevolent values are more likely to show protective behaviour, but are less likely to adjust certain practices to reduce climate change. Nonetheless, ensuring a certain amount of social security in policies concerning the energy transition is very important. The narratives of the interviewees showed that addressing poverty and providing social security is important. It is therefore recommended that ideas around the security value are included in new policies.

The third sub question focused on the different discourses around energy vulnerability. These discourses were derived from the five different spheres as operationalised by Haarbosch et al. (2021). Eight different dominant discourses have been identified. The discourses are distinct, but some show overlap with others. For example, technological capabilities and economic burdens both show

links to the security value, and endorse the existence of social inequality and are therefore also linked to this discourse. These discourses see inequality as a cause of the problems related to the energy transition. Altough all three discourses differ in their focus, and have other litanies, the underlying causes correspond. Those discourses around security are important, as these discourses endorse the importance of social security, complementing the more holistic view of universalism. A universalist view can sometimes be too optimistic, and by attaching security values to this, more people can agree with such new policies. Of course not everyone can relate, the discourse on economic profits does for example not necessarily fit this narrative, but to enter a just transition, some sacrifices have to be made in other areas, such as growing profits.

It is important to once again acknowledge that each dominant discourse creates its own solutions (Inayatullah, 1992). Envisioning futures is therefore also not inseparable from the dominant discourses. Four different main visions came to surface in the narratives of the interviewees. The visions for the different futures suggest that focus should be put on tackling inequality and polarisation, making protecting the environment an intrinsic motivation, and on more long-term policymaking. Different ideas to achieve this have been discussed. However, none of the interviewees envisions futures which focusses on technological solutions, the futures on which most policies relies. Although energy-saving measures and devices were mentioned as effective means to address energy vulnerability, when asked how people preferred to see their future, focus was put on environmental and social equitable futures, and certain recommendations were made. These kinds of futures are in line with universalist ideology, where protection for the welfare of all people and for nature is highly valued (Schwartz, 2001).

To radically reshape the future towards a just one, a shift in focus is needed. Both quantitative content analysis and narrative analysis showed that it is time to move away from only technological futures. Universalist values correspond mostly with the visions of interviewees, and especially the discourse of sustainable living, and vision III fits in this rhetoric. By alleviate existing regulations, and making little free stuff cabinets, steps to tackle the negative consequences of the energy transition can be made on both the local and national scale. However, to ensure an even bigger impact on sustainable and social equitable futures, an overarching strategy is needed. It is therefore suggested to set up a citizens' assembly concerning sustainable and social futures. A citizens' assembly brings different people together (vision I), and can be seen as a new way of doing politics (vision IV) (Henning, 2017). Citizens assemblies have proven to be successful to tackle all kinds of societal problems – from abortion to climate issues – and could also help to decrease inequality (vision II) and to create sustainable awareness (vision III) (Henning, 2017). By combining the current initiatives, visions and ways of thinking of the interviewees, the idea of a citizens' assembly has been born, a conclusion that encourages action to change the futures.

5.2 Discussion

This study connected a futures approach, the CLA, to the field of energy justice, specifically to the field of energy vulnerability. When studying the eight dominant discourses, the first three layers of CLA helped to understand the deeper meanings of a discourse. The fourth layer has been disconnected from a specific discourse, and is used to envision different future pathways and recommendations related to more energy justice. Critical futurists might denounce the analysis of the third layer of CLA, discourses and worldviews, as superficial. The human values of Schwartz (1992) that are used to describe the third layer of a dominant discourse is but a small part of all discourses and worldviews that influence the litany of the dominant discourse. However, as Inayatullah (2004) mentioned, the goal of this level is to search for deeper attitudes and ideas that create the idea of a collective identity, not to ponder over choosing the "right" level of discourse. Follow-up research could possibly look at how, for example, other forms of discourses (such as epistemic or ideological discourses) relate to these eight dominant discourses.

Furthermore, concerning the data collection, there are also some points of discussion. The first one considers the fact that the data retrieved from the European Social Survey (ESS) originates from 2018. In 2018, the problem of energy vulnerability was far from as immense as it is nowadays (see for example Figure 14). Although human values are not very susceptible to time-based events or crises, opinions towards energy usage and certain regulations can be. If people today had to fill in the question to what extent they fear energy being too expensive for some people, their answers will probably differ from the ones four years ago. For follow-up research it is therefore suggested to use the question as asked in this unique cross-sectional module of ESS, in another questionnaire. It would be interesting to see whether there is a shift in opinions regarding energy usage. By asking the same questions (both the unique module and the questions concerning human values), a longitudinal research design emerges, and a difference-in-difference analysis can be conducted. With this analysis, one can see to which degree people with different human values changed their opinions. The contribution of this research could be twofold, first, such research will provide new information on the current state of affairs regarding energy vulnerability, and second, it is theoretically interesting to see if the relationship between human values and opinions on a particular topic differ over time.

The second one is concerned with the research population. The people spoken to in this study largely live or work in the same rural municipality. This was chosen for two reasons, the first being practical in nature, these people also participated in a project at the internship site where I conducted this research. The other reason has to do with the fact that these people have a similar point of reference, namely their physical environment and a similar social map. The downside of this is that there may be different voices in other parts of the country, especially urban areas. The research results can therefore not be easily generalised

to the whole of the Netherlands, but they do provide good tools for developing policies that are concerned with more social and sustainable futures. Furthermore, although talks were held with some people that experienced energy vulnerability, there has only been one interview concerning futures around energy with an expert by experience. However, by also interviewing a pastor and an artist, two new focal points have been added to future narratives around energy.

Lastly, the quantitative content analysis of the newspaper articles lacks some depth. The analysis helped to give insight into how the Dutch newspapers covered energy vulnerability, and thus also on how Dutch citizens are informed concerning the topic. However, it was not analysed whether or not an article that fit within the economic sphere, belonged to the dominant discourse of economic profit or the one of economic burdens. For further research it is therefore suggested to do a more extensive quantitative content analysis, in which also the different discourses within a sphere will be separated.

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Appendix A: operationalisation basic human values

Operationalisation of the basic human values according to Schwartz, Breyer & Danner (2015):

- Conformity: “Important to do what is told and follow rules” & “Important to behave properly”;
- Tradition: “Important to be humble and modest, not draw attention” & “Important to follow traditions and customs”;
- Benevolence: “Important to help people and care for others well-being” & “Important to be loyal to friends and devote to people close”;
- Universalism: “Important that people are treated equally and have equal opportunities”, “Important to understand different people” & “Important to care for nature and environment”;
- Self-Direction: “Important to think new ideas and being creative” & “Important to make own decisions and be free”;
- Stimulation: “Important to try new and different things in life” & “Important to seek adventures and have an exciting life”;
- Hedonism: “Important to have a good time” & “Important to seek fun and things that give pleasure”;
- Achievement: “Important to show abilities and be admired” & “Important to be successful and that people recognize achievements”;
- Power: “Important to be rich, have money and expensive things” & “Important to get respect from others”; and;
- Security: “Important to live in secure and safe surroundings” & “Important that government is strong and ensures safety”

Appendix B: interview guide

The interviews were semi-structured, below one can find the main questions and direction of the interviews.

Introductie
- Wat is het doel van dit interview
- Wie ben ik
- Vertel eens wat over jezelf

Thema introductie
- Wat roept duurzaamheid bij je op? Kun je daar verder op ingaan?
- Wat roept armoede bij je op? Kun je daar verder op ingaan?

Specifieke vragen thema
- Wat zijn dingen die jij gedaan hebt? Waarom?
- Kun je vertellen hoe je denkt over energie armoede? Wat komt er als eerste in je op?

- Wat voor oplossingsrichtingen zie je? Wat zie jij als oplossingen voor het probleem? En welke risico's zitten er aan deze oplossingen?

Toekomst gerichte vragen

- Als jij het voor het zeggen had, wat gebeurde er dan om dit (maar wellicht ook meer problemen) op te lossen? Waar zou jij focus op willen leggen in de toekomst?

Algemene afronding

Appendix C: commands quantitative content analysis

Connection to online database via:
https://advance.lexis.com/bisacademicresearchhome?crid=5b9da547-c376-4a1b-8d92-88e523a607b9&pdmfid=1516831&pdisurlapi=true

Sources included: *Dagblad van het Noorden, Dagblad De Limburger, De Gelderlander, de Volkskrant, Noordhollands Dagblad, De Twentsche Courant Tubantia Trouw, Brabants Dagblad, De Stentor, BN/DeStem, Leeuwarder Courant, De Telegraaf, NRC, AD/Haagsche Courant, Leidsch Dagblad, De Gooi- en Eemlander, Haarlems Dagblad, NRC Handelsblad, IJmuider Courant, Het Parool, Eindhovens Dagblad, Friesch, AD/Rivierenland, AD/De Dordtenaar, AD/Utrechts Nieuwsblad, AD/Rotterdams Dagblad, Nederlands Dagblad, AD/Amersfoortse Courant, AD/Groene Hart, Provinciale Zeeuwse Courant, AD/Algemeen Dagblad, Reformatorisch Dagblad, Huis-aan-huiskranten de Persgroep, Meppeler Courant, Hoogeveensche Courant, Nieuwe Ooststellingwerver, Nieuwsblad Noordoost-Friesland, Cobouw, Steenwijker Courant, HS-krant, Metro (NL), Stellingwerf, Flevopost Lelystad, Franeker Courant,Balkster Courant, De Noordoostpolder, Nieuwe Dockumer Courant, Flevopost Dronten, Groninger Gezinsbode, Staphorster, Boerderij Vandaag, Asser Courant, Eemsbode, Huis aan Huis, Krant van Midden Drenthe, Roder Journaal*

Economy command: "energie armoede" OR "energiearmoede" AND "winst" OR "belasting" OR "vaste lasten" OR "economi*" OR "financi*"

Environment command: energie armoede" OR "energiearmoede" AND "duurza*" OR "milieu" OR "uitstoot"

Politics command: "energie armoede" OR "energiearmoede" AND "adminstratief" OR "bureaucrati*" OR "regel*" OR "politiek"

Social command: "energie armoede" OR "energiearmoede" AND"sociaal" OR "verschil*" OR "ongelijkheid" OR "leeftijd" OR "geslacht" OR "woonsituatie"

Technology command: "energie armoede" OR "energiearmoede" AND "techni*" OR "vooruitgang" OR "appara*" OR "hernieuwba*" OR "zonnepane*" OR "techno*"