

# GENDERED ENERGY INEQUALITY

Understanding the mundane realities  
of women living in energy poverty in  
Groningen



university of  
 groningen

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# COLOPHON

Title: Gendered Energy Inequality: *Understanding the mundane realities of women living in energy poverty in Groningen*

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## Preface

Dear reader,

You are about to read my master thesis for the Master Environmental and Infrastructure Planning of the University of Groningen. The process of writing this thesis has been challenging at times, but has proven very rewarding in the end. During these stressful times my thesis supervisor, dr. E. Turhan, has helped me and supported me tremendously. In addition, I would like to thank all 12 women for their contribution to this research, but also in general for opening up to me and for the the interesting and special conversations. Moreover, I would also like to thank the experts for taking the time to let me interview them.

Enjoy reading!

Lieke Mijnheer

Groningen, July 6, 2023

## Abstract

In a society where we aspire to switch to sustainable forms of energy sooner rather than later, there is a large group of people who cannot keep up with this transition; the energy poor. Energy poverty entails the inability to access sufficient energy services. However, energy poverty is not only a pressing issue in relation to the energy transition but also because of its possible distressing impacts on people's daily lives. Numbers by CBS and TNO show that the group of people living in energy poverty in the Netherlands is only increasing. Due to the multidimensional character of the issue, there usually is not one main cause and the impacts can affect different areas of an individual's life. Remarkably, women are more likely to become energy poor while also suffering more from the possible impacts. Therefore, it is important to understand the way women experience and navigate the mundane realities of living in energy poverty. This study uses assemblage thinking as a concept to dissect the multidimensionality of energy poverty in combination with a case study in the Dutch city of Groningen, where semi-structured interviews with women currently experiencing, or having experienced, energy poverty were conducted to uncover the mundane realities of women living in energy poverty. On top of this, expert interviews provided insights into the current Dutch policy landscape regarding energy poverty and gender. The results show that there is indeed a gender dimension to energy poverty due to gender roles. These women experience multiple impacts of living in energy poverty, such as high levels of stress, being more prone to getting a cold, and having to cut spending on other necessities to be able to pay their energy bills. Moreover, from a policy point of view, gender is not yet taken into account with regard to energy poverty while also lacking a long-term vision maintaining the vagueness surrounding the topic.

**Keywords:** *Energy poverty, Energy vulnerability, Energy transition, Energy justice, Gender-inequality, Assemblage thinking, Women, Lived experience*

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## List of Abbreviations

ENERGIA	International Network on Gender and Sustainable Energy
EZK	Ministry of Economic Affairs and Climate Policy
NECP	National Climate and Energy Plan
RES	Regional Energy Strategy
WTP	Warmtetransitie Plan
EPOV	The European Energy Poverty Observatory



# 1. Introduction

## 1.1 Background

Suzanne is a single mother of two children living in Amersfoort, the Netherlands. After her divorce, she had to pay for all expenses by herself while working part-time and taking care of the children at the same time. With her salary she was not able to cover all costs, resulting in debts with her energy provider. This has a negative impact on her life as feelings of stress and anxiety to pay the bills and care for the children are an everyday reality for Suzanne (Middlemiss et al., 2018). And just like Suzanne, there are many more people in the Netherlands living in energy poverty. ‘Increased impact of energy poverty in Groningen and Drenthe’, that is the title of an article by Sociaal Planbureau Groningen at the end of 2022 (Sociaal Planbureau Groningen, 2022). This article shows that between February and November 2022, the share of citizens in Groningen experiencing energy poverty increased from 20% to 27%. Moreover, in February 54% of the inhabitants mentioned taking part in energy-saving behavior, while this percentage increased to 76% in November 2022. These numbers, in combination with the ambitions of the Dutch government to phase out natural gas in homes to reach the climate goals of the Paris Climate Agreement in 2015 (UNFCCC, 2022), and the increase in gas prices in the Netherlands due to the war between Russia and Ukraine (Mulder et al., 2023) make energy poverty a pressing issue in Groningen.

Investing in home renovations and heating-free technologies are among the tools needed to succeed in this transition. To reach the goal of becoming energy neutral by 2050, the Netherlands has to invest approximately 100 billion euros (Rotmans & Verheijden, 2022). In the long-term, this transition towards clean energy will result in a reduction of costs, while short-term investments will increase energy prices (CE Delft, 2021). This rise in energy costs will affect not only the industry and agriculture sector but also households. However, households with low incomes do not have the financial means to deal with this increase in energy expenditures, and they also do not have the financial means to invest in sustainable energy technologies. This is confirmed by Carley & Konisky (2020), as their research showed that within the Global North, sustainable energy technologies, such as solar panels, are used mainly by households with a higher income. Therefore, the energy transition might only increase inequalities, due to lower income households not being able to join this transition. Thus, energy poverty is a pressing concern that needs attention when transitioning toward an energy-neutral society. Moreover, due to the increase in energy prices over the past year, the number of households experiencing energy poverty in the Netherlands has increased by 90.000 between 2020 and 2022. Figure 1 shows the expected percentage of increase in energy poverty in the Netherlands (Mulder et al., 2023). Here it becomes apparent that areas with the highest increase are spread over the country.

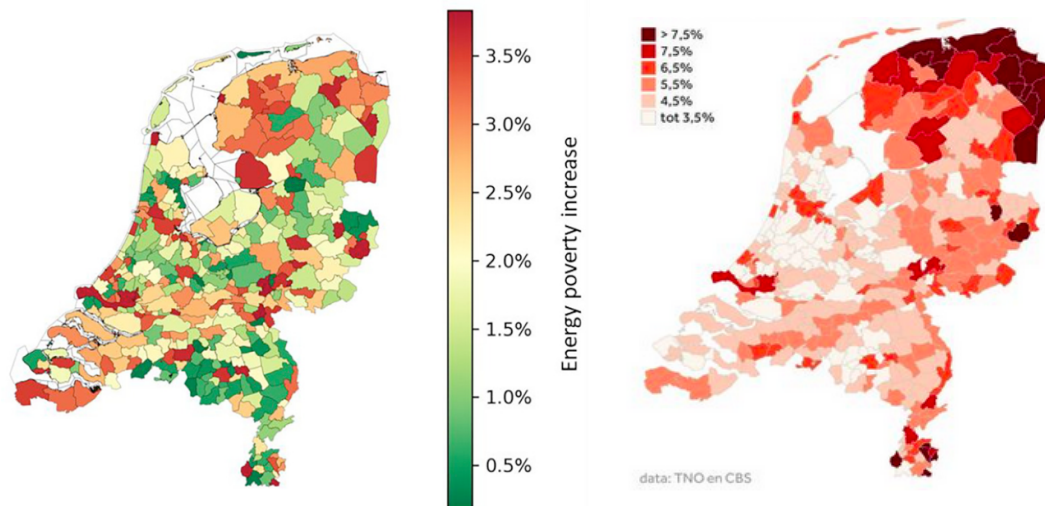


Figure 1 (left) Expected energy poverty increase between 2020-2022 in the Netherlands (source: Mulder et al., 2023)

Figure 2 (right): Percentage of combination low income and badly insulated households in the Netherlands (source: NOS, 2023)

Luckily, the financial measures taken by the government to attenuate the increase in energy poor households have done their job. Without these measures, it is estimated that the number of households living in energy poverty in the Netherlands would have doubled to around one million (CBS, 2023). Numbers of a report by TNO (2021), show that around 70% of Dutch households experiencing energy poverty live within social housing owned by a housing corporation. These homes are often badly isolated and the residents cannot renovate them by themselves (CBS, 2023). When looking at the combination of low income households and badly isolated dwellings, the province of Groningen negatively stands out (see Figure 2).

## 1.2 Societal relevance

Currently, due to rising energy costs the percentage of people living in energy poverty in the European Union is increasing, also in the Netherlands (Sociaal Planbureau Groningen, 2022). And even though the issue has gained attention over the last couple of years within the European Union, policy action on the level of individual member states has only recently begun to take off (Bouzarovski et al., 2021; Mulder et al., 2023). For the Netherlands, this means that data from TNO and CBS has been used to design compensation measures for household energy bills (TNO, 2021). Moreover, the government is working on setting up an energy poverty monitor, to keep track of the numbers in the Netherlands (Mulder et al., 2023). The Dutch government is currently working on the transition towards a sustainable energy system. This focus also raised awareness of the possible inequalities related to this transition (e.g. energy poverty) (ibid.). These growing inequalities are not in line with the Sustainable Development Goals (specifically number 7; Affordable and clean energy) (United Nations, n.d.a) and with the aim of a just energy transition. According to Mulder et al. (2023), a just energy transition can be defined as follows:

*“a situation where (i) everyone has access to affordable, reliable and clean energy services, (ii) everyone can participate in decision-making processes regarding changes in the energy system, and (iii) there is recognition of problems arising from energy poverty and unequal opportunities in the transition.”* (Mulder et al., 2023, pp 2.)

Thus, the importance of the energy transition from fossil-fuel energy sources towards renewable energy sources also influences the energy poverty debate. Middlemiss et al. (2019), explain that energy poor households are usually not able to contribute to the energy transition, due to a lack of financial means and a lack of head space. In light of the energy transition, the urgency to tackle energy poverty does not only arise from the will of helping people but also to aim for an inclusive energy transition towards renewable forms of energy. Of course, the newfound interest and data monitoring of energy poverty are very important steps in tackling energy poverty, but they do not specifically take into account the impacts energy poverty can have on one's daily life. By focussing on the daily implications of energy poverty (of women in particular), lessons and key insights can be identified for government bodies to come up with fitting policies to tackle energy poverty and to support those experiencing it. This way, also people with a lower income will get the chance to partake in the energy transition.

### 1.3 Scientific relevance

Most of the present literature on energy poverty in Europe is focused on defining, quantifying, and measuring energy poverty (Longhurst and Hargreaves, 2019). Bouzarovski and Petrova (2015) researched the definition of the concept and related concepts, Meyer et al. (2018), try classifying energy poverty into three categories: measured energy poverty, hidden energy poverty, and perceived energy poverty, Day et al. (2016) conceptualize energy poverty using the multiple capabilities concept, and Middlemiss and Gillard (2015) focus on the impacts of energy poverty. All these studies, and many more, have succeeded in explaining the multidimensional character of the phenomenon. However, the lived experience of energy poverty is usually neglected within the literature resulting in a gap between policy measures and the lived experience (Longhurst and Hargreaves, 2019; Middlemiss et al., 2018). Even though insight into the mundane reality of energy poverty is crucial for creating fitting policies aimed at reducing energy poverty and its impacts.

In addition, over the last couple of years, research into energy poverty has acknowledged the gendered aspect of the concept. Research done by Feenstra and Ozerol (2021), mentions that women are affected more by energy poverty compared to men, both in the Global North and in the Global South. Middlemiss (2022) and Robinson (2019), both did research into the gendered aspect of energy poverty in the Global North and tried to come up with explanations as to why this is the case. These authors found that being more vulnerable to becoming energy poor is frequently linked to having caring responsibilities and being at home more. So again, most research into the relationship between energy poverty and gender is focused on the causes, rather than the impacts. Therefore, the contribution of this research to the existing literature is twofold. Firstly, it focuses on the daily lived experience of energy poverty and the impact it may have on an individual's life. And secondly, it adds to the literature by specifically focusing on the gendered aspect of energy poverty in relation to its mundane realities.

## 1.4 Research objectives and questions

The aim of this research is twofold. First, it aims to expand the limited research on women's lived experience of energy poverty in day-to-day life. Second, this research aims to help policymakers come up with fitting policies aimed at reducing energy poverty. To do so, the research is focused on women living in the city of Groningen, the Netherlands, and on experts practicing their profession in this area. Based on this, the following research questions have been formulated:

Main research question:

*How do women experience and navigate the mundane realities of living in energy poverty?*

Secondary research questions:

- 1. How do policies at the different governance levels address the multidimensionality of energy poverty and gender?*
- 2. How do women experience energy poverty in their daily lives in Groningen?*
- 3. How do local policymakers respond to gendered energy poverty in Groningen?*

## 1.5 Reading guide

Chapter one of this study provides the reader with context as it shows the background, relevance, and urgency of energy poverty in the Netherlands. Then, chapter two explains the theoretical framework, focusing on the debate in the literature about the definition of energy poverty, the multidimensionality of the concept, the relationship between energy poverty and gender, and the influence of energy poverty on wellbeing. Next, chapter three will explain the methodology of the research. Later, in chapter four the results of the qualitative research are discussed. Then, chapter five and six places the results in the wider societal and scientific context, which creates room for discussion and recommendations for future research. And lastly, chapter seven includes a reflection on the research process.

## 2. Theoretical Framework

In this chapter, an in-depth theoretical background of this research will be given. In order to answer the sub-questions, a thorough understanding of the key concepts needs to be established. The first part of this chapter will focus on the definition and measurement of energy poverty, after which the multidimensionality of the concept will be explored. Once a thorough understanding of energy poverty is established the relationship between gender and energy poverty is analyzed. Lastly, the impacts of gender on wellbeing as mentioned in the literature are studied.

### 2.1 Energy Poverty

Energy poverty is an ambiguous concept and there is not one clear definition amongst scholars. The concept and field of study have emerged and evolved over the last 30 years. In 1991 the definition of fuel poverty already occurred within British policy (Bouzarovski, 2018). This is seen as a huge step in the acknowledgment of energy poverty as an actual problem, as it paved the way for scholars to research the causes and impacts of the issue (Bouzarovski, 2018). Research conducted by Boardman (1991), described fuel poverty, in the British context, as the situation in which a household is to spend more than 10% of their income on fuel in order to heat their home to a satisfactory temperature. Within academic literature the term fuel poverty is sometimes used as a synonym for energy poverty, however, others use it as a specific aspect of energy poverty (Barnes et al., 2011). Even though the UK has been debating fuel poverty longest, it is nowadays being researched frequently in different countries and contexts around the world (Ambrose & Marchand, 2017).

Since the first definition of fuel poverty, which was mainly focused on heating, the concept has broadened to also include energy regarding cooling, which resulted in countries such as Australia also being included in the debate (Ambrose & Marchand, 2017). Moreover, in recent years an increase in research in Eastern and Central Europe on this topic can be noticed (Bouzarovski & Petrova, 2015). Within the European Union energy poverty has even been recognized as a key EU policy priority (Thomson et al., 2017). This shows that the concept is currently being widely acknowledged. At the emergence of the scientific debate, a divide was being made between the Global North and Global South, or in other words, developed and developing countries. Originally, in the Global North, the term fuel poverty is being used, of which the main causes are explained to be the interaction between low income, high energy prices, and the energy efficiency of homes (Mulder et al., 2023). On the other hand, in the Global South, the term energy poverty is originally used, of which the 'classic' causes can be attributed to a lack of access to (advanced) energy infrastructures (Bouzarovski & Petrova, 2015; Charlier and Legendre, 2021). However, these traditional understandings of energy poverty and fuel poverty have been challenged due to the increased globalization and marketization of energy (Bouzarovski and Petrova, 2015). These authors explain that this gap between fuel poverty and energy poverty is no longer important. Thus, the two can be used interchangeably as both energy poverty and fuel poverty refer to the difficulties regarding energy consumption, whatever the cause may be (Charlier & Legendre, 2021).

While the definitions of the concepts were at the beginning mostly associated with income and accessibility, nowadays the multidimensionality of the problem is being recognized (Bouzarovski, 2018). Within the literature, more and more attention is given to other factors influencing the likelihood of someone experiencing energy poverty, such as environmental, cultural, and technical aspects (Bouzarovski and Petrova, 2015). This has led to a broader definition of the concept. Gonzalez-Equino (2015, p.379) defines energy poverty as follows: “*a level of energy consumption that is insufficient to meet certain basic needs*”. But what are basic needs? These depend on subjective variables, cultural meanings, knowledge and skills, and institutional arrangements (Bouzarovski and Petrova, 2015). Bouzarovski (2018), describes energy poverty as the situation where a household is not able to secure a specific level and quality of energy services needed for their specific needs. What could help structure the clutter of definitions and information regarding the multidimensionality of energy poverty is the breaking down of the concept as done by Meyer et al. (2018). They sub-classify energy poverty into three categories; high energy bills compared to income (*measured energy poverty*), not being able to meet basic energy needs (*hidden energy poverty*), and self-reported difficulties regarding energy poverty (*perceived energy poverty*). Measured energy poverty focuses on the ‘original’ way of measuring the concept. This ‘original’ way of measuring being households whose energy expenditures are very high in comparison to their total income. This corresponds with the original definition of energy fuel by Boardman (1991). Hidden energy poverty explains that people might lower their energy consumption voluntarily to deal with the high costs of energy. And lastly, perceived energy poverty entails the subjective part of energy poverty that cannot be captured by the other two. This category is focused more on the emotional impacts of energy poverty (Meyer et al., 2018).

An interesting theory within the literature is the link between energy poverty and capabilities research (Day et al., 2016). These authors build upon the capability theory as originally developed by Amartya Sen and Martha Nussbaum (Nussbaum and Sen, 1993). This theory criticized how economic development was mainly focused on wealth measured in income or GDP. Nussbaum and Sen argued that by doing so, other essential factors influencing the quality of life were being ignored. Rather, according to them, the focus should be more on broader human wealth, also including what someone can achieve in life (Nussbaum and Sen, 1993; Day et al., 2016). Within this theory, capabilities are opportunities to realize functionings. Nussbaum and Sen (1993) define functionings as ‘beings and doings’, for example having good health and having paid work (Day et al., 2016). Increasing an individual’s capabilities can then in turn result in the realization of functionings (ibid.) Linking this theory to poverty results in seeing poverty as a lack of capabilities (Nussbaum and Sen 1993; Alkire, 2007), essential to accomplish important functionings, such as being healthy (Day et al., 2016). Going a step further, Day and others then conceptualize energy poverty with an emphasis on the importance of energy for supporting multiple capabilities. This results in the following definition of energy poverty:

*“The inability to realise essential capabilities as a direct or indirect result of insufficient access to affordable, reliable and safe energy services, and taking into account available reasonable alternative means of realising these capabilities.”* (Day et al., 2016, p.260).

This definition is illustrated in the following figure (see Figure 3). With this definition, an individual’s or household’s basic capabilities (such as good health and relationships) (which

were called functionings in the original capabilities theory) are at the core. These basic capabilities require secondary capabilities (such as washing and cooking), which require energy (such as heating and lighting). Of course, energy services in turn need an energy supply (such as electricity), and these energy supplies are derived from a fuel (such as gas). In other words, energy is crucial for accomplishing essential capabilities (Nussbaum, 2000)

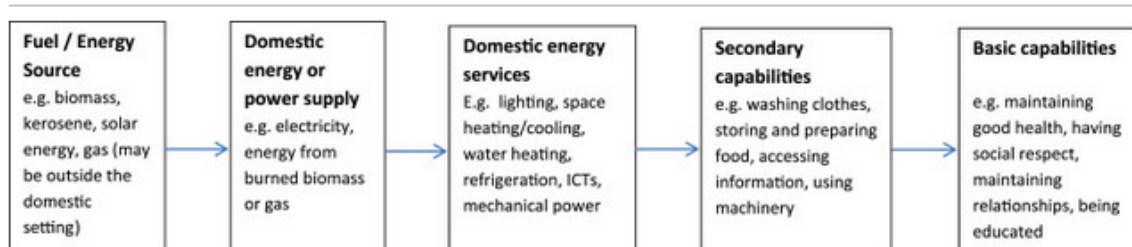


Figure 3: Conceptualising the relationship between energy, services and outcomes (source: Day et al., 2016)

By using this definition of energy poverty, the dynamic, context-specific, and multidimensional character of energy poverty is included (Day et al., 2016). As Thomson et al. (2017), explain, energy poverty has a temporal character, meaning that people experiencing energy poverty at a certain moment might not experience it anymore in the future due to their circumstances changing. The last part of the definition considers alternative ways to reach certain capabilities. For example, reaching a certain degree of temperature within the home can also be achieved by improving the dwelling design (Day et al., 2016). However, it must be noted that this definition is not suitable for large-scale measuring or monitoring of energy poverty. But, since this research focuses on the impact of energy poverty on day-to-day life, this definition is fitting since it leaves room for local and personal circumstances. For the sake of this study, the definition of Day et al. (2016) is used due to its focus on the multidimensionality of energy poverty. Table 1 shows an overview of the multiple definitions of energy poverty mentioned.

Definition	Source
“The inability to realise essential capabilities as a direct or indirect result of insufficient access to affordable, reliable and safe energy services, and taking into account available reasonable alternative means of realising these capabilities.”	Day et al. 2016, p.260
The situation in which a household is to spend more than 10% of their income on fuel in order to heat their home to a satisfactory temperature.	Boardman (1991)
“A level of energy consumption that is insufficient to meet certain basic needs”.	González-Eguino 2015 p-379
The situation where a household is not able to secure a specific level and quality of energy services needed for their specific needs	Bouzarovski (2018)

Table 1: Definitions of energy poverty (source: the author, 2023)

Just as defining energy poverty appears to be a challenge, so is measuring it to find out which people experience it. The ambiguity of the concept is also visible in case studies in the literature. For example, Castaño-Rosa et al. (2020), who have focused on energy poverty in Spain, mention that using different definitions of energy poverty can result in different numbers of energy poverty. When adopting the definition used in the European Union Survey on Income and Living Conditions, mostly low income households living in colder climates are being classified as energy poor. While applying the definition of the Survey of Living Conditions from the Spanish National Statistics Institute results in households living in energy inefficient dwellings with bad heating systems also being labeled as energy poor (ibid.).

The research done by Boardman (1991), about fuel poverty uses the so-called expenditure based approach to approach the problem. This approach is based on the affordability of energy compared to income (Trinomics, 2014). Boardman (1991) uses spending 10% of the total income on energy services as the threshold for classification of a household as energy poor. However, this classification received critique, for it is said to not be inclusive enough. When this 10% limit is the only measure used to identify energy poverty, also rich people who spend more than 10% of their income on energy due to them having an, for example, at-home sauna will be labeled as energy poor. When of course in reality they are not. Moreover, households who consciously choose to not use heating due to high costs could fall below the 10% limit and thus will not be classified as energy poor when in truth they do experience energy poverty (hidden energy poverty). So, measuring energy poverty based on one indicator (income) does not cover the entirety of the problem as it falsely includes and excludes people. Another approach to measuring energy poverty is the consensual-based approach. This approach focuses on perceived energy poverty instead of on hard numbers (Trinomic, 2014). It includes factors such as the emotional impacts of energy poverty and is thus suitable for researching the mundane impacts of energy poverty.

To summarize, energy poverty is a complex and multidimensional problem, which is located at the intersection of different aspects, such as income, energy costs, and energy efficiency (Faiella and Lavecchia, 2021). This is also explained by Bouzarovski (2018), who states that energy poverty can be conceptualized by a multitude of different technical/material, economic, emotional, and spatial components interacting together. The next chapter will focus on this way of conceptualizing energy poverty, called assemblage thinking.

## 2.2 Assemblage thinking and energy poverty

The multidimensional character of energy poverty can be dissected using the theory of assemblage thinking (Bouzarovski, 2018). Assemblage thinking refers to the emergence and multiplicity of multiple elements into some sort of structure. It entails diverse elements that can be human or non-human, natural or non-natural, technical or non-technical, etc. (Anderson & McFarlane, 2011). In the case of energy poverty, Bouzarovski (2018), uses assemblage thinking to conceptualize the term as it exists of a multitude of different material/technical, economic, emotional, and spatial components interacting together. The following sections will dive deeper into the different assemblages of energy poverty.

First, according to Day & Walker (2013), multiple material/technical (infrastructure) components influence an energy poor household, such as the building itself, heating systems, cooking devices, and other appliances. The efficiency, condition, and other characteristics of



these material components can have a big impact on the energy usage of households. Moreover, issues such as the inefficiency of buildings, inflexible heating systems, and no access to more suitable energy carriers, can create high energy costs and inefficient energy services (Maxim et al., 2016). Living in an energy inefficient dwelling forces people to pay more for their energy services due to these homes needing more energy to be properly heated (Bouzarovski, 2014). While a lack of access to energy services (in combination with low income) is one of the commonly researched causes of energy poverty, in developed countries this is not a frequent issue (Charlier & Legendre, 2021). Logically, improvements in energy efficiency will reduce energy costs, and thus decrease the likelihood to become energy poor. However, according to Middlemiss & Gillard (2015), without economic support (in the form of funding), additional information, and ownership of the dwelling, energy poor households are not capable of making lasting changes to increase their energy efficiency.

Second, income and energy poverty are closely related. Even though there are multiple factors influencing the likelihood of someone becoming energy poor, income is one of the main reasons. According to Boardman (1991), the main reason for people becoming energy poor in the United Kingdom and Ireland is the interaction between low income and inadequate housing. Moreover, income can also determine other characteristics of a household, such as housing quality and housing size (Halkos & Gkampoura, 2021). Income also influences people's ability to buy a house. Mulder and Straver (2023) mention that a high percentage of energy poor people in the Netherlands live in rental housing owned by a housing corporation. These people are dependent on the housing corporation to implement any energy efficiency increasing measures while living in a dwelling with an energy efficiency label of F or G. This is in line with research by Meyer et al. (2018), which shows that being a tenant increases the likelihood of a household becoming energy poor because, often, these houses are less energy efficient. Moreover, tenants do not have the same opportunities as housing owners to adapt their homes. Currently, the renovation rate of inefficient energy tenant houses in the Netherlands is slow (Mulder and Straver, 2023).

Third, energy poverty also has an emotional component. Other than the likelihood of someone experiencing energy poverty being affected by their economic situation and the place in which someone lives, it is also culturally sensitive. In the sense that the expectations of energy services are different per person and thus subjective and socially constructed (Bouzarovski, 2018). The realization of these expectations influences the ability of individuals to perform their day-to-day activities and thus achieve wellbeing (Nussbaum, 2013). Another aspect is the level of knowledge someone has of how to use their home and appliances in the most energy-efficient way (Middlemiss, 2022). Moreover, social relations between family members living in the home influence the priorities being made regarding energy. When choices need to be made, the composition of the households is important. For example, adults of a family with children may decide to put the heating on only when the children are at home (Middlemiss & Gillard, 2015). These decisions can also be a source of tension within the home, negatively impacting one's mood (ibid.). Emotions affect patterns of energy demand (Longhurst & Hargreaves, 2019). For example, when looking at the Danish context, the concept of '*hygge*' (having a 'cozy' home) is very important. Reaching this goal of '*hygge*' may influence energy choices (Jensen et al., 2018).

And fourth, energy poverty also has a spatial component. The spatial component of energy poverty is closely linked to the material/technical aspect of energy poverty. Energy poverty is temporal. Meaning that a household or a person can live in energy poverty one moment, and then move out of it another moment (Robinson et al., 2018). Despite this, certain spatial characteristics can increase the likelihood of becoming energy poor. For example, the material and infrastructural situation of an area. Earlier research into the spatiality of energy poverty recognizes that the phenomenon is different in both national and neighborhood/household contexts (ibid.). When looking at the occurrence of energy poverty in Europe, the high numbers in Southern Europe can be explained by the low energy efficiency of the dwellings. While in Eastern Europe, the main cause can be ascribed to post-socialist economic and legal systems which have resulted in high energy prices (ibid.). Zooming into the local scale, specific household types and demographics increase the chances of experiencing energy poverty, and since households with comparable characteristics usually cluster in the same spot, it is also a spatial phenomenon (ibid.). Next, a spatial differentiation can also be made between urban and rural areas. Inner city areas often consist of energy inefficient older dwellings. And urban neighborhoods have a higher share of rental housing in which people do not have the same authority compared to housing owners (Ambrose, 2015). Based on studies in Europe, rural households are more prone to energy poverty than urban households. This could potentially be explained by the availability to fuel resources, bigger dwellings that are more expensive to heat, or the higher poverty levels in general in rural areas (Thomas and Snell, 2013).

### 2.3 Gender and (Energy) Poverty

Energy is highly gendered. From the user side to the supply side, men and women have different opportunities regarding energy usage (Winther et al., 2017). Even though the relationship between energy and gender has been under-researched in the past, the topic has currently been getting more attention. Since 1995 there even is an international network of energy and gender (ENERGIA) (Listo, 2018). The goal of ENERGIA is to bring researchers and professionals in the fields of energy and gender together to stimulate discussion on this topic.

When specifically talking about access to electricity, the time spent by women on cooking through the availability of the electric stove significantly decreased, leaving them with more time to do other things, such as working (Winther et al., 2017). According to Grogan & Sadanand (2013), the availability of electricity in Nicaragua increased the likelihood of women being employed by 23%, while this relationship for men was not visible. Another positive impact of electricity access is the increase in girls attending school (Khandker et al., 2009). Focusing on energy consumption and gender, the academic literature is contradictive. Fong et al. (2007) found that Japanese working females use more energy at home compared to men, due to women often working part-time. A study conducted in Europe contradicts these findings. This study found that men consumed more energy at the household level compared to women (Raty & Carlsson-Kanyama, 2010). These contradictive studies highlight the necessity of including geographic locations when reviewing energy and gender (Fathallah & Pyakurel, 2020). In general, gender does influence household energy consumption. Male-headed households have lower energy emissions compared to women-headed households. A possible explanation for this could be the labor division between men and women and the fact that women spend (in general) more time at home while men consume more energy related to leisure activities and transport (Zhan et al., 2015).

Since the newfound interest in energy poverty over the last couple of years, more research has focused on the relationship between gender and energy poverty. Before being able to analyze this relationship further, it is necessary to first identify what is understood when speaking of the term gender. For this research, the definition of gender is based upon Risman (2018), who explains gender as “a social structure that labels and legitimizes particular behaviours, roles, and responsibilities as ‘feminine’ or ‘masculine’, which in turn works to ‘script’ and bound social action in various ways” (Petrova & Simcock, 2021, p.851). A result of gender roles can be inequalities between people. Gender is not fixed, as it can change over time and context (ibid.).

According to Petrova and Simcock (2021), research in the Global North shows that gender influences energy poverty. Moreover, Bouzarovski & Tirado Herrero (2017), show that gender can influence the probability of someone experiencing energy poverty. They discovered that households where a woman is in charge are disproportionately impacted by energy poverty. Furthermore, Feenstra & Ozerol (2021), state that women in general are affected more by energy poverty compared to men. However, the gender dimension of energy poverty varies across different social, cultural, and economic contexts, as people, disregarding their gender, are always influenced in the choices they make by personal factors (Broto, 2019).

Structural inequalities between men and women are still visible in different aspects of life; women tend to earn less, own less, are underrepresented in decision-making, and have more responsibilities for unpaid work (Clancy et al., 2017). These stereotypical ‘gender roles’ can result in women being more at risk of becoming energy poor. Robinson (2019), identified five dimensions of gendered, socio-spatial vulnerabilities to energy poverty (see Figure 4): (i) unpaid caring or domestic roles, (ii) exclusion from the economy, (iii) susceptibility to negative health impacts, (iiii) lack of social protection, and (iiiii) coping and helping others cope. Below, these five dimensions are explained further.

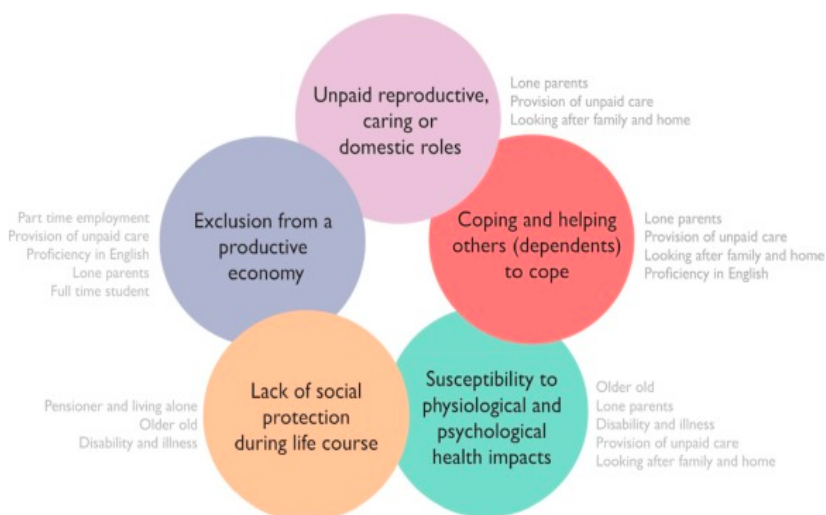


Figure 4: Five dimensions of gendered, socio-spatial vulnerabilities to energy poverty (source: Robinson, 2019)

First, women tend to participate more in caring or domestic roles, and household tasks (Pickard, 2015; Middlemiss and Gillard, 2015). In England, of the people spending more than 20 hours per week on unpaid care, around 66% are women. Moreover, approximately 90% of one-parent families with children are cared for by women (Robinson, 2019). These caring responsibilities result in women being more at home compared to men and having less time to bring in economic resources. According to Middlemiss (2022), this combination makes women more likely to experience energy poverty.

Second, despite positive developments, there are still structural inequalities between men and women in the labor market (Rubery, 2015). Due to the caring roles of women, women tend to work more part-time jobs, thus earning less than men. Besides, the so-called feminization of the labor market resulted in accommodating flexible employment, resulting in facilitating these gendered domestic and caring roles (Robinson, 2019). Lower income due to this form of economic exclusion based on gender could have the effect that women are having trouble paying their energy bills or investing in energy efficient infrastructures (ibid.). Moreover, females tend to earn less for every hour worked compared to males. Within the EU this gap is on average 13% (European Commission, 2021). This specific type of vulnerability is most accurate amongst single-parent families who are mostly led by women (Rabindrakumar, 2013).

Third, Gender and someone's sex influence one's experience of health (Vlassoff, 2007), making women more vulnerable to the health impacts of energy poverty. Among groups known to be vulnerable to the effects of energy poverty, such as the elderly, people with a disability, or an illness, women are overrepresented (Robinson, 2019).

Fourth, the inequalities women face during their lives, such as the inequalities in the labor market and their over responsibility for caring roles, can result in gender inequalities later on in life because women have less chance of building a comfortable pension. At an older age, the combination of higher vulnerability to the health impacts of energy poverty and reduced financial stability makes women more likely to be exposed to energy poverty (Robinson, 2019).

Fifth, it is widely known that people who experience energy poverty take part in coping mechanisms (Petrova and Simcock, 2021). Examples of these coping mechanisms are reducing energy usage by choosing to spend less on other necessities (Middlemiss, 2022; Petrova and Simcock, 2021). Literature on coping in general shows that household coping is mostly the task of a woman (Robinson, 2019). When in a situation of material stress, like energy poverty, gender roles usually intensify (Bondi and Christie, 2000). This could result in women deciding on eating or heating less themselves to be sure their family is able to live more comfortably (Rabindrakumar, 2013).

## 2.4 Wellbeing and Energy poverty

The daily experience of individuals living in energy poverty is shaped by someone's perception of themselves (Middlemiss & Gillard, 2015). The consequences of energy poverty can negatively impact an individual's daily life in multiple ways and on different aspects of life, for example; social isolation, housing, education, mobility, and many more (Middlemiss et al., 2018). Living in energy poor conditions is associated with both direct and indirect health risks. These indirect health risks include mental health problems, stress, depression, and anxiety, while the direct effects include a higher mortality risk and increased morbidity (Recalde et al., 2019). According to Middlemiss (2022), when comparing people who experience energy poverty with people who do not, these individuals have, in general, more (mental) health problems than those who do not experience energy poverty. Furthermore, experiencing energy poverty increases the likelihood of stress-associated behavior such as smoking and drinking alcohol. These effects can then in turn influence someone's social life, creating a downward spiral (ibid.).

A study within 32 European countries shows that people living in energy poverty are statistically more likely to experience poor self-reported wellbeing compared to non energy poor individuals (Thomson et al., 2017). Moreover, the data showed that, among other countries, the Netherlands reported one of the biggest gaps between self-reported wellbeing between energy poor individuals and non-energy poor individuals, even though the Netherlands has lower energy poor numbers and higher income equality levels compared to other European countries. An explanation for this outcome could be the relative deprivation hypothesis, which explains that on the individual level, social comparison negatively affects the perception of one's own situation. This can negatively impact an individual's emotions, mental and physical health, and behavior (ibid.). In other words, if you compare yourself to others around you who are, in your eyes, better off, your sense of wellbeing will decrease because you are directly reminded of what you are missing.

Someone's social life is not only influenced by health effects due to energy poverty but also by feelings of shame regarding inadequate heating within the home (Middlemiss, 2022). Shame is a very harmful emotion possibly resulting in low self-esteem and dignity (Pellicer-Sifres et al., 2021). This can for example result in feelings of insecurity regarding inviting people into your home. Research by Pellicer-Sifres et al. (2021), mentions that such withdrawal behavior is a well-known result of energy poverty. It can also make people restrict their energy consumption when alone while increasing it when there are guests to make sure that others are not aware of their situation. In even worse cases, people experiencing energy poverty completely restrain from inviting people into their homes. By doing so, social isolation is very likely to happen which in turn can increase feelings of loneliness and depression, negatively impacting someone's wellbeing (ibid.). Moreover, friends and family can be of great importance in supporting energy poor individuals and help cope with their problems. This support can be in the form of giving advice, financial help, or simply opening up their warm homes (Longhurst and Hargreaves, 2019). The link between energy poverty and social relations is twofold as having good social relations can increase access to energy while having good access to energy can also result in better social relations (Middlemiss et al., 2019).

When dealing with energy poverty, people tend to undertake coping practices. Most of these practices can be reduced to not, or using less, energy for heating (Middlemiss, 2022). However, these strategies can also mean cutting spending on other necessities such as food to save money (Petrova and Simcock, 2021). These practices influence day-to-day life and have a gendered character. According to Petrova and Simcock (2021), when looking at heterosexual couples, women tend to undertake most of the concrete everyday coping practices to minimize energy expenditure. In comparison, coping practices undertaken by men are usually focused on increasing energy efficiency. For example, the installation of insulation or purchasing of low-energy appliances (ibid.). When specifically looking at day-to-day life, people experiencing energy poverty might experience a restriction in making decisions and overall anxiety about their energy usage (Pellicer-Sifres et al., 2021). This is because basic day-to-day tasks, such as cooking, for these individuals, revolve around energy consumption. This constant alertness decreases someone's ability to make their own choices and have autonomy in their own life (ibid.).

Experiencing energy poverty can also have an emotional impact on people because it might result in feelings of fear, guilt, and shame (Hards, 2013). These emotional impacts are also generally experienced differently by males and females. One reason for this is that women tend to be at home more and are thus exposed for longer periods to inadequate energy services and thus experience the negative emotional and physical consequences more compared to men (Petrova and Simcock, 2021). The same research also explains that constant checking and acting upon the minimization of energy usage is emotionally and mentally tough.

## 2.4 A just energy transition

Through the increasing attention to energy poverty over the recent years, the debate of achieving a just energy transition has also gained momentum (Feenstra et al. (2021). A just energy transition can be placed in the wider framework of energy justice. Moreover, number 7 of the Sustainable Development Goals specifically focuses on energy; “*Ensure access to affordable, reliable, sustainable and modern energy for all*” (United Nations, n.d.a). To achieve this goal, energy poverty must be tackled. As people living in energy poverty by definition do not have access to affordable energy sources, let alone sustainable energy sources. By voicing this goal, the United Nations has committed itself to tackling energy poverty. Energy justice aims to stimulate a just energy transition in three ways: (i) through the just division of rights (distributive justice), (ii) through the awareness of needs (recognitional justice), (iii) and through rightful decision-making in the energy system (procedural justice) (Sovacool et al., 2016). As already mentioned, women are among the groups who are disproportionately affected by energy poverty (see Chapter 2.3). Feenstra (2023), advocates that because of this overrepresentation of women in energy poverty, more attention to gender differences within the energy transition, as well as more knowledge on how policy can respond to this inequity, is necessary. According to Mulder and Straver (2023), the energy transition is increasing the inequality already present in society due to not all households having the same opportunities to participate in this transition. In practice this results in rich and higher educated people being able to invest in increasing their dwellings energy efficiency compared to poorer and less educated people. This way, people who have less money and are lower educated spent relatively more on energy than richer and higher educated people. In the long-term, this gap will only increase because the benefits of sustainable energy technologies will only increase in the future (Mulder and Straver, 2023).

## 2.5 Conceptual model

The conceptual model (Figure 5) shows a schematic overview of the concepts of this research and how they are expected to relate to one another. The literature study showed that the concept of energy poverty has a multidimensional character. These components, the material situation, the economic situation, the spatial characteristics, and the emotional context, all influence the likelihood of someone becoming energy poor, and their specific situation if they already live in energy poverty. Moreover, energy poverty has a negative correlation with wellbeing which then also negatively impacts someone’s daily life. Moreover, the literature shows that there is a connection between gender and energy poverty, wellbeing, and everyday life. In addition, high levels of energy poverty negatively impact a just energy transition. While creating a just energy transition in turn positively affects the overall energy transition.

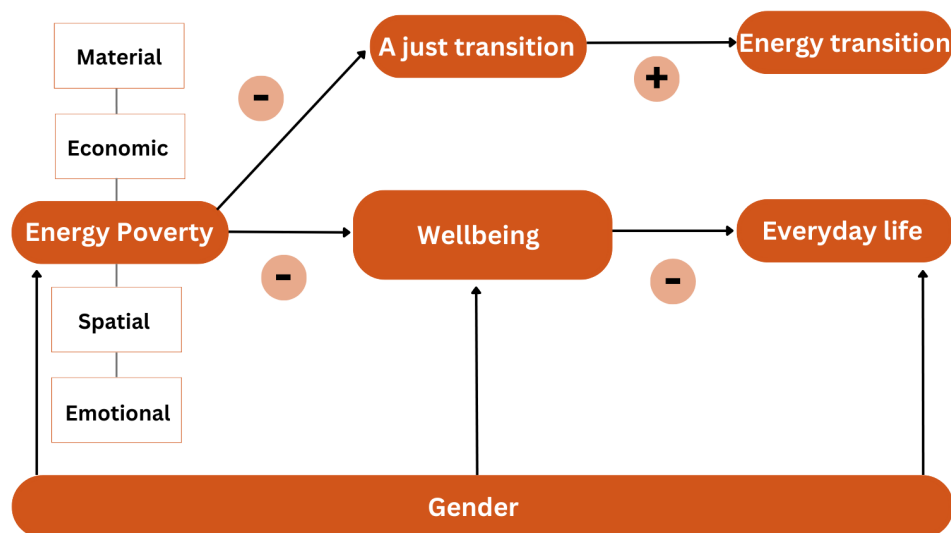


Figure 5: Conceptual model (source: The author, 2023)

### 3. Methodology

This chapter focuses on the methodology of this research. First, the chapter discusses the research design and the case study, explaining the case selection. Then, the data collection and data analysis methods are elaborated on. Lastly, the ethical considerations regarding this research are discussed.

#### 3.1 Research design

This study makes use of a single case study approach. Because the main research question tries to answer a question related to experiences (experiences of energy poverty in daily life), a qualitative research method is most suited (Silverman, 2020). Qualitative research aims to understand the meaning and experience of a specific dimension in someone's life (Fossy et al., 2022). According to Yin (2009), case study research needs a multitude of data sources to accomplish triangulation. Within this qualitative study, two methods are applied; policy analysis and (expert) interviews. The results from the policy document analysis are used to answer sub-question one, and the outcomes of the interviews result in answers to sub-questions two and three. The literature review is used to create the interview guide. Together, the results help to answer the main research question. This triangulation of the data collection strengthens the results and provides the researcher with more in-depth insights (Clifford et al., 2016). Figure 6 shows an overview of the research design.

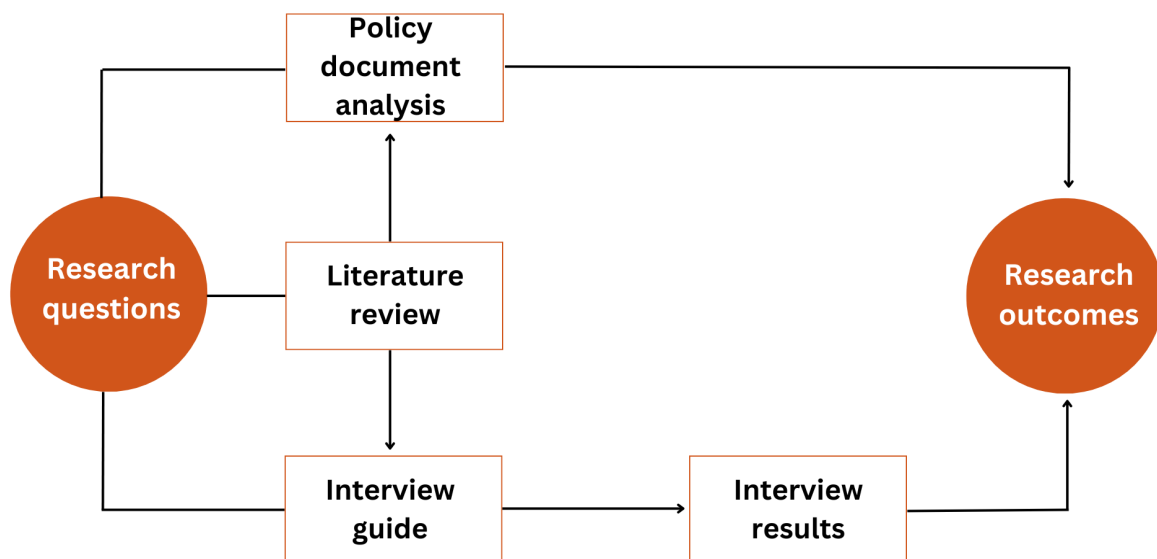


Figure 6: Overview of the research design (source: The author, 2023)



### 3.2 Case study and case selection

This research uses a case study approach. A case study is an in-depth analysis of a social phenomenon (Feagin et al., 1991). This approach is useful for this specific study as it helps to give insight into context-specific knowledge about a certain subject, which is crucial for social research (Flyvbjerg, 2006), such as the everyday experience of energy poverty. Yin (2009), explains case study research as a method that allows researchers to investigate the meaning of real-life situations. Moreover, the case study approach is used to study contemporary phenomena over which the researcher has limited control (ibid.), such as energy poverty. One important note that should be mentioned is that the generalization of the results from single case studies must be done carefully. Case studies are conducted in unique and situation-specific contexts, making the results less useful to analyze universal theories (Harvey, 1979). Still, the results of the single case study can be valuable as an example that can be applied to other research or situations (Flyvbjerg, 2006).

Defining the case is a crucial step in the research as it will set the boundaries and scope of the research. This can be done by setting a temporal, theoretical, and spatial boundary (Yin, 2009). The temporal boundary is determined by the data collection period, which took place from April 2023 to June 2023. The theoretical boundary is established in the theoretical framework section of this research. And lastly, the spatial boundary is based on the case selection of a neighborhood in Groningen, the Netherlands. This case selection is discussed more in-depth in the following section.

The selected area for this research is the city of Groningen, the Netherlands. According to TNO (2022), one of the places in the Netherlands with the highest percentage of energy poverty is Groningen. Moreover, within the last two years, the expected increase in households living in energy poverty in Groningen is among the highest in the entire Netherlands (see Figure 1). Zuidema and van Geet (2021), have done research into energy poverty in the municipality of Groningen. The interim report of this research shows that the amount of households living in energy poverty in the municipality of Groningen is higher compared to the Netherlands in general. Figure 7 shows the number of households at risk of becoming energy poor based on an energy quote of 8 (left) and an energy quote of 10 (right). The energy quote shows the ratio between a household's energy costs and its income. So, an energy quote of 8% is the percentage of households that spent 8% or more of their total income on energy bills (Urban Data Center regio Groningen, 2019). In other words, the energy quote explains energy poverty as a situation in which a high percentage of the total income is spent on energy (Mulder et al. 2023; Charlier and Legendre, 2021). An energy quote of 10 indicates that a household spends more than 10% of its income on energy (Zuidema and van Geet, 2021). This energy quote of 10 is in line with the definition of Boardman (1991), and even though it is too simplistic because it only takes into account income, there are currently, to my knowledge, no other energy poverty datasets available with numbers of Groningen.

When looking at these maps it becomes clear that the city of Groningen has higher numbers of people at risk of energy poverty than the surrounding villages (such as Haren and Ten Boer). At the neighborhood scale, there are a few neighborhoods that have the highest percentage of households at risk of energy poverty. For the energy quote of 8% these are: Selwerd and de Hoogte (21%), Kostverloren and Indische buurt (20%), and Binnenstad-oost, Tuinwijk, and Noorderhoogebrug (17%). For the energy quote of 10%, Selwerd has the most households at

risk with 11%, followed by the Hoogte with 10% and Kosterverloren with 9% (Zuidema & van Geet, 2021). Moreover, research by the Municipality of Groningen, TNO, New Energy Coalition, University of Groningen, and the Urban Data Center Regio Groningen investigated energy poverty in the city of Groningen. This research shows that energy poverty is most evident in the neighborhoods Selwerd, Kostverloren, Inidsche buurt, and Professorenbuurt (Urban Data Center Regio Groningen, n.d.). This makes women living in the neighbourhood of Selwerd (see Figure 7), an interesting case to explore the effects of energy poverty on the day-to-day life of women. The results can give policymakers valuable information to purposefully tackle energy poverty and create tools aimed specifically at helping people dealing with energy poverty.

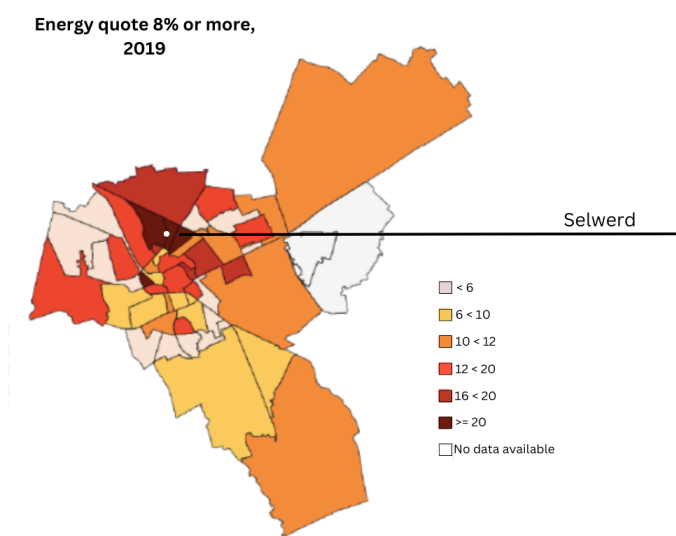


Figure 7: Risk of becoming energy poor in Groningen (source: Urban Data Center Regio Groningen, 2019., edited by author)

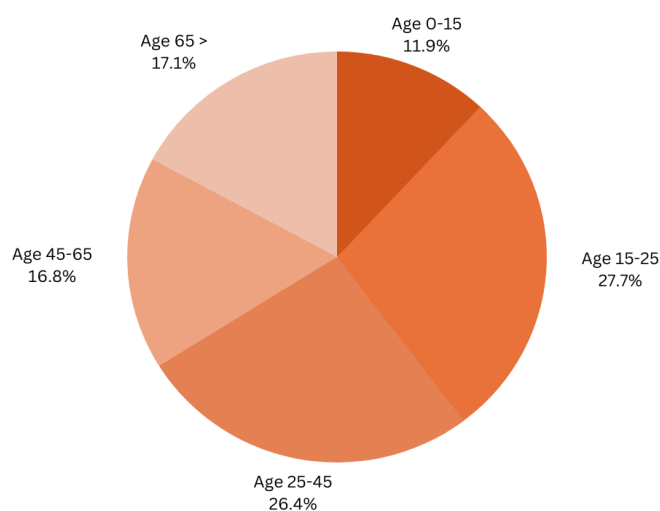


Figure 8: Age distribution Selwerd (source: based on numbers by CBS, 2022)

Neighbourhood characteristic	Number	Percentage
Citizens total	5900	
Male citizens	2910	
Female citizens	2990	
Western citizens	715	
Non western citizens	1510	
Total number of households	3710	
One person households	2490	
Households without children	615	
Households with children	605	
Owner occupied houses		21%
Rental houses		79%
Houses owned by housing corporations		54%

Table 2: Neighbourhood characteristics of Selwerd (source: CBS, 2022)

Selwerd is a neighborhood in the northern part of Groningen between Paddepoel and Korrewegwijk. In 2022, the neighborhood had 5900 residents, with an average income of 18.300 (allecijfers, 2023a). Table 2 and Figure 8 present some neighborhood characteristics of Selwerd. Figure 9 shows the energy efficiency labels of the dwellings in Selwerd, of which more than 50% have a label of C or lower.

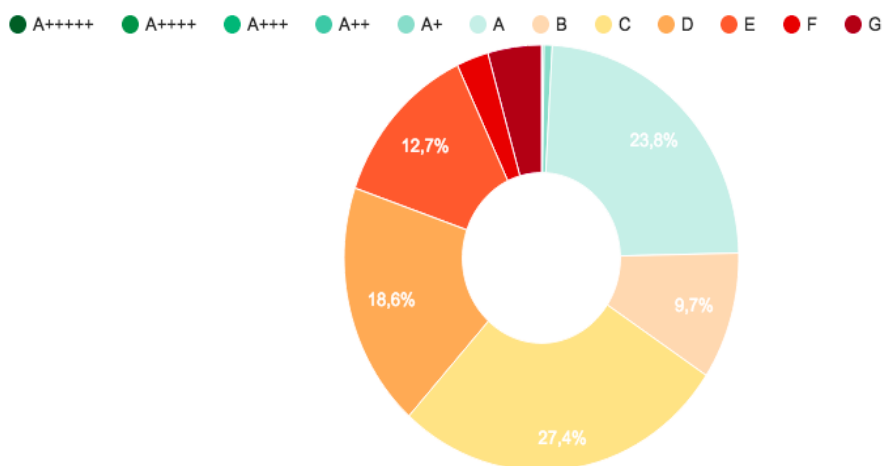


Figure 9: Energy efficiency labels Selwerd (source: allecijfers, 2023a)

Even though Selwerd is the main focus area of this research, data is also collected in other parts of the city of Groningen to be able to make a comparison to see if women living in other neighborhoods of the city have the same experiences.

### 3.3 Data collection

The following section will explain the different data sources used and collected for this research. A literature review, policy analysis, and in-depth interviews are combined in order to answer the research questions.

#### 3.3.1 Literature review

By doing a literature review relevant theories and debates about energy poverty were identified in chapter 2. The results of the review of academic literature and research reports formed the basis for the interview guide. Mostly scientific search engines were used such as SmartCat and Google Scholar to search for scientific articles. Since energy poverty has been studied extensively in the last couple of years most of the literature sources used in this study are from 2017 onwards. Also, references from useful articles were used to search for other potentially useful literature (the snowball method). Moreover, grey literature such as research reports from research organizations, such as TNO, were consulted. Most of the literature reviewed is from European countries since these have the most resemblance to the situation in the Netherlands.

#### 3.3.2 Policy analysis

Alongside the literature review, Dutch policy documents are analyzed. Policy analysis most commonly entails the evaluation of the document, either to critically analyze the document itself or the possible implications of the policies (Tight, 2019). This type of research can be applied to all sorts of research domains as policies influence all social sciences (ibid.). Policy analysis is often used in combination with other types of research methods, such as interviews, to allow for data triangulation (ibid.). For this research, documents from national, regional, and local governmental levels help gain further understanding of the case and its broader context. By doing so, the policy analysis helps answer the following sub-question:

- *How do policies at the different governance levels address the multidimensionality of energy poverty and gender?*

For all three government levels, one official policy document was selected. The policy analysis starts with analyzing the wider context of energy poverty and gender in the Netherlands (Integrated National Energy and Climate Plan), then focusing on the regional context (Regional Energy Strategy), and lastly diving deeper into the local context (Heat transition vision Groningen). Table 3 shows an overview of the documents selected for the policy analysis.

<b>Policy document</b>	<b>Author</b>	<b>Government level</b>
Integrated National Energy and Climate Plan 2021-2030 (2019)	Ministry of Economic Affairs and Climate Policy	National government
Regionale Energiestrategie Groningen 1.0 (2021)	Energy region Groningen	Regional/Provincial government
Regionale Energiestrategie Groningen 2.0 (2023)	Energy region Groningen	Regional/Provincial government
Warmtetransitieplan Groningen (2019)	Municipality of Groningen	Local government

*Table 3: Overview documents used for policy analysis (source: The author, 2023)*

All policy documents were analyzed based on a set of 6 topics. These topics are (1) Production and Consumption, (2) Finances, (3) Emotions, (4) Spatiality, (5) Roles and Responsibilities and, (6) Gender. These topics are based on two articles. The first is Siksnylyte-Butkiene et al. (2021), in which existing literature about energy poverty indicators was reviewed and the second is the assemblages of energy poverty as explained previously in this study (Bouzarovski, 2018). Siksnylyte-Butkiene et al. (2021) mention ten groups of indicators; efficiency, income, habits, economic, social, institutional, energy prices, type of energy, energy consumption, and energy import/export. When looking at these indicators, they can all be divided into one of the four assemblages of energy poverty; material/technical, economic, emotional, and spatial. To successfully analyze the policy documents, these four overarching topics were re-named into Production and Consumption, Finances, Emotions, and Spatiality. Moreover, Roles and Responsibilities is added to the list as a fifth category to analyze if the documents include any specific actions and if so who is responsible for this. Also, Gender is included as the final category because the analysis aims to see how gender is incorporated into the documents. By using these 6 categories the multifaceted nature of energy poverty is included in the policy analysis.

### 3.3.3 Interviews

The last method of data collection are interviews. To answer the second and third sub-question, the literature review and policy document review were combined with in-depth (expert) interviews to connect theory and practice. Firstly, I held multiple interviews with women in Groningen to gain a better understanding of the impacts and implications energy poverty has on their daily life. Secondly, I interviewed 6 experts from governmental authorities, in the field of energy poverty. For this research semi-structured interviews were used. Meaning that the interviews are based on a pre-determined list of questions (the interview guide) while also leaving room for the interviewee to touch upon other topics (Clifford et al., 2010) (see appendices A and B). The sampling strategy for this research is purposive sampling, meaning that the interviewees were selected based on pre-determined criteria to select the most relevant participants (Knott et al., 2022). The expert interviewees were selected based on the following criteria:

- The interviewee has extensive (professional) knowledge of energy poverty

- The interviewee works at a (non) governmental organisation in the Groningen region

The women were selected based on the following criteria:

- A woman living in Selwerd or in another neighbourhood in Groningen
- Currently experiencing, or having experienced, energy poverty on a daily basis

Moreover, it is important to mention that the interviewee selection of the women is based on perceived energy poverty as explained by (Meyer et al., 2018). Thus focusing on the emotional impacts of energy poverty which are perceived differently by everyone. Therefore, perceived energy poverty is fitting for answering the second sub-question:

- *How do women experience energy poverty in their daily lives in Groningen?*

While the expert interviews help answer the third sub-question:

- *How do local policy makers respond to gendered energy poverty in Groningen?*

Getting access to the field was done through so-called gatekeepers. These are people working at social organizations who have relations and contacts in the neighborhood and who are trusted by the potential interviewees. Multiple organizations were contacted, but the WIJ-teams in Groningen proved most fruitful. Groningen is divided into multiple WIJ-teams. These WIJ-teams give advice and support the people living in Groningen with whatever they need. For example, people can come to the WIJ-team if they have questions regarding parenting, but also if they need financial advice. In other words, they try to be an easily approachable point of contact for the citizens of Groningen (WIJ Groningen, n.d.). Often, people working for a WIJ-team are in close contact with the people living in a neighborhood. After getting in contact with one of the WIJ-teams, the opportunity of doing a focus group interview occurred. This way, these women could engage in the conversation regarding energy poverty within a safe environment instead of having a one-on-one conversation with me, a total stranger. Moreover, two *energiecoaches* (energy coaches) were interviewed. They are part of *Duurzaam Groningen* (sustainable Groningen), an initiative by the municipality of Groningen. Citizens can make an appointment with an *energiecoach* who will visit their house and gives personal advice about ways in which someone can save energy (duurzaam groningen, n.d.).

All interviews were conducted in Dutch, since that is my native language and that of most interviewees. An overview of the interviewees can be found in Table 4.

<b>ID / Persona</b>	<b>Organisation</b>	<b>Function</b>	<b>Date</b>
Focus group (FG)* - Asha (W1) - Ida (W2) - Fatma (W3) - Alisa (W4) - Malti (W5)	-	-	22/05/2023

- Inge (W6) - Jasmijn (W7) - Liani (W8) - Berrin (W9) - Samya (W10)			
Sara (W11)*	-	-	02/06/2023
Roos (W12)*	-	-	06/06/2023
Expert 1 (E1) **	Municipality of Groningen	Policy employee Energy	01/06/2023
Expert 2 (E2) **	Municipality of Groningen	Project secretary program Energy	01/06/2023
Expert 3 (E3)	Province of Groningen	Policy employee Energy	31/05/2023
Expert 4 (E4)	Municipality of Groningen	Energy coach	05/06/2023
Expert 5 (E5)	Municipality of Groningen	Energy coach	05/06/2023
Expert 6 (E6)	WIJ Oosterparkwijk	Community worker	07/06/2023

Table 4: Overview of the interviewees (source: The author, 2023)

\*Not their real names

\*\*One interview with both experts together

### 3.4 Data analysis

To successfully analyze the interviews, the interviews were recorded (with the consent of the interviewee) using an audio recording software. After this, the interviews were transcribed using the transcription software Trint. Coding was done manually based on the theoretical framework and interview guide (see appendices A and B).

### 3.5 Ethical considerations

Ethical considerations are important to take into account when doing research because it will increase the credibility of the research. Furthermore, acting ethically will also guard the rights of the people involved in the research (Clifford et al., 2010). In order to do so, all interviewees were given the consent form beforehand to voice the aim and purpose of the study and to explain how the gathered data would be used (see Appendix C). Moreover, at the beginning of each interview, the interviewee was asked for permission to mention their name and if they agreed with the interview being recorded. After transcribing the transcripts were sent to the interviewees so they had the opportunity to review them and make comments in case of inaccuracies.

## 4. Results

This chapter focuses on the results of the study, divided per sub-question. The first section will focus on the policy analysis intended to dive deeper into how the different governance levels address the multidimensionality of energy poverty and gender, the second on the lived experience of energy poverty by women in Groningen, and the third section focuses on the results from the conversations with experts in Groningen to see how they respond to gendered energy poverty.

### 4.1 The Dutch energy poverty policy landscape

#### 4.1.1 Context of the policy documents

First, it is important to describe the wider context of the multiple policy documents to be able to shape a complete picture and put the documents in perspective. Within the Netherlands, an official national definition of energy poverty is missing, even though the interest in the issue is growing. Currently, because of the Dutch decentralized government system, the energy poverty approach is the responsibility of the municipalities. And although this decentralization allows for area-specific policy interventions, it can also result in inconsistencies and a lack of control (Feenstra, et al., 2021). A positive development is the yearly monitoring of energy poverty by the CBS since 2021 (CBS, 2021).

The national policy document that will be analyzed is the Integrated National Energy and Climate Plan (NECP) written by the Ministry of Economic Affairs and Climate Policy (EZK) (Ministry of Economic Affairs and Climate Policy, 2019). Each EU member state had to compose a final NECP before the end of 2019. By doing so, each country had to explain how they are going to reach the objectives of the European Green Deal between 2021-2030 (European Commission, n.d.). The audience of the document is the European Commission. However, the content of the NECP of the Netherlands is also useful for the Dutch provinces and municipalities. In June 2023 all member states need to submit an updated version of their NECP (ibid.).

Within the Dutch NECP, it is mentioned that each region has to construct a Regional Energy Strategy (RES) in order to offer guidance to the implementation of renewable energy, and thus the energy transition, in the regions (RES, n.d.b). Moreover, the goal of the RES is to stimulate and ensure collaboration between different (governmental) organizations. For the energy region Groningen, the RES has been developed together with all ten Groninger municipalities, the Province of Groningen, and waterboards Noorderzijlvest and Hunze en Aa's, in close collaboration with multiple energy and environmental organizations (ibid.). In 2021 the RES 1.0 Groningen was completed. This document included the first goals and agreements and obligates the authorities to implement these into their policies. The RES 2.0, which all energy regions need to submit before July 2023, reflects on the RES 1.0 and includes new developments (RES, n.d.a.). The energy region Groningen has already composed its RES 2.0 (RES Groningen, 2023).

For the local governmental level, the *Warmtetransitie plan* Groningen (heat transition vision) (WTP) is analyzed. All Dutch municipalities were asked to develop a heat transition vision before the end of 2021. This document includes specific ways in which the municipality is



going to approach the transition toward renewable energy (Rijksdienst voor Ondernemend Nederland, 2022). Furthermore, it also includes a roadmap at the neighborhood level. The Municipality of Groningen has high ambitions regarding the energy transition as it aims to become CO<sub>2</sub>-neutral in 2035 (Gemeente Groningen, 2021). By setting this goal the municipality is a frontrunner within this transition.

#### 4.1.2 Analysis based on the six criteria

As already explained in section 3.3.2 the policy documents are analyzed to see how energy poverty is incorporated in them, based on six criteria; a) Production and Consumption, b) Finances, c) Emotions, d) Spatiality, e) Roles and Responsibilities, and f) Gender. The following sections will discuss the findings of each policy document based on these criteria.

##### a) Production and Consumption

When taking the definition of energy poverty by Day et al. (2016) into account, having access to safe, reliable, and affordable energy services is key to tackling energy poverty. However, the war in Ukraine has shown that the Netherlands is very much relying on Russian Gas. The NECP mentions that there are no specific policies aimed at reducing the dependence of the Netherlands on third countries or policies focused on increasing the diversity of natural gas suppliers (Ministry of Economic Affairs and Climate Policy, 2019). Because of the volatility of the current energy market and the dependence on Russian gas, an increase in the number of Dutch households living in energy poverty could be observed. Focusing on energy consumption within the NECP, very general remarks are being made regarding inequality. For example, it is being stated that the quality of life in the Netherlands has improved over the past decades, but the inequality between regions and groups of people is increasing. Furthermore, no special attention is drawn to the fact that not all households are able to invest in energy-saving or insulation measures. The dwellings in the province of Groningen are for the most part outdated, meaning that they are mostly badly insulated. Resulting in even higher costs for making these dwellings natural-gas free. This is one of the issues in Groningen influencing the number of people living in energy poverty (RES Groningen, 2021). The WTP Groningen is for the most part focused on the transition towards gas-free housing, for example through the construction of *warmtenetten* (heat networks). When constructing these *warmtenetten* it is mentioned that is important to support all citizens with this transition to make sure that everyone is comfortable). (Gemeente Groningen, 2021).

##### b) Finances

Within the NECP the number of people living in energy poverty in the Netherlands is calculated based on the indicators used by The European Energy Poverty Observatory (EPOV). These indicators are: (1) households that indicate themselves to not be able to afford to heat their homes adequately, (2) households that report having overdue payments on their energy bills, (3) hidden energy poverty (when a household's energy expenditure is below half of the national median), and (4) households that spend more than twice the national average share of their income on energy. But, an official definition implemented by the national government is missing. Furthermore, the NECP mentions that the transition towards a 49% reduction of greenhouse gas emissions by 2030 must be achieved in a manner that is affordable for everyone. In practice, this means that households will have to contribute less compared to businesses (so-called '*woonlastenneutraliteit*'). However, no distinction is being made between households. So, there is no specific extra focus on vulnerable households compared to non-vulnerable households in relation to this distribution. There are however ways in which

municipalities can support those with low incomes, through general poverty policies. Moreover, the national government has assigned money for a tax reduction on energy bills. The design of this tax reduction aims to ensure that the lowest income groups benefit most. The RES Groningen 1.0 mentions that the average income of households in the province is, in most places, below the Dutch average (RES Groningen, 2021). This, in combination with the high costs of the transition towards natural-gas-free houses, makes all involved parties worry about energy poverty. Moreover, the RES Groningen 1.0 mentions that the '*woonlastenneutraliteit*' is not achievable due to insufficient attention and resources from the central government for the region to succeed in this. An important goal of the WTP Groningen is to organize the energy transition in such a way that it is affordable for everyone and in such combat energy poverty. However, specific ways (for example which funds are used or needed) in which this goal will be achieved are not included in the document (Gemeente Groningen, 2021).

#### c) Emotions

The emotional dimension of energy poverty is in no way mentioned within the NECP, both the RES Groningen documents, and the WTP Groningen. Cultural social differences between those living in energy poverty, or feelings of shame and anger, or the stress resulting from high energy costs, are not part of these documents.

#### d) Spatiality

On the national and regional levels, no attention is given to the spatiality of energy poverty. More area-specific measures and goals need to be executed by the lower governmental bodies. Within the *Warmtetransitieplan* Groningen, there is, in general, attention to the urgency of neighbourhood-specific and situation-specific solutions. There are no specific actions mentioned for the energy poor, however, they can (as can all the other citizens) make use of the energy coaches to get personal advice regarding energy-saving techniques.

#### e) Roles and Responsibilities

Specifically mentioning energy poverty, the NECP states that at the time of writing, the Netherlands does not have an energy poverty policy, but that helping those with a lower income is part of the general poverty policy (Ministry of Economic Affairs and Climate Policy, 2019). The general poverty measures are mostly the responsibility of the municipalities. Thus, tackling energy poverty currently is also mostly the responsibility of the municipalities. The responsibility of the national government is, according to the NECP, the formulation of long-term goals. However, regarding energy poverty, a long-term vision is missing.

The RES 1.0 Groningen explains that it can only succeed in its goals and ambitions if and when the national government has its responsibilities for certain themes in check. For example, regarding a fair distribution of the burdens and benefits, and the affordability of the energy transition. These themes are closely related to energy poverty and show that the RES Groningen expects the national government to create a vision regarding these topics. The RES 2.0 describes more specific roles and responsibilities regarding energy poverty. Again, these are mostly focused on the Groninger municipalities. The role of the province of Groningen is largely focused on the organization of knowledge-sharing activities between the municipalities (RES Groningen, 2023).

The municipality of Groningen acknowledges its responsibility to tackle energy poverty in the Warmtetransitieplan Groningen. One of the ways in which they try to do so is by the so-called *energieloket* (energy counter). Here, all citizens of the municipality can get situation-specific advice on how to better insulate their homes and how to generally save energy (through a visit of a *energiecoac*). By doing so, the municipality tries to support everyone in the energy transition. Furthermore, for the local approach, an important task lies with the corporations owning a large share of the houses in Groningen. The municipality of Groningen has made clear agreements with the housing corporations, such as: (1) in 2025 57% of the dwellings must have energy label A, and (2) tenants will be actively involved in the projects.

f) Gender

The gender dimension of energy poverty (or gender in general) is not part of the NECP. Moreover, apart from the general poverty policies, there is no special focus on any disadvantaged groups in relation to the energy transition. Again, gender roles and responsibilities are not incorporated into both RES Groningen documents, as well as in the Warmtetransitieplan (WTP) Groningen. But, for the WTP there is more consideration for disadvantaged groups, such as the energy poor, compared to the other documents, but ways in which the municipality is specifically going to help them are not mentioned.

To conclude, the concept of energy poverty is, both implicitly and explicitly, sporadically mentioned within all governmental documents. So, within the Dutch policy field, the documents show that energy poverty is an increasing problem and that without any action the number of households living in energy poverty will only increase. However, it remains very general and shallow. None of the documents contain specific action points on how to tackle energy poverty. Regarding the roles and responsibilities, it seems clear which governmental level is responsible for what, however especially the national government does a poor job in their responsibility. It is their task to create a long-term vision regarding energy poverty, something the municipality of Groningen also mentions in its WTP to be currently missing. Without all governmental levels taking their task seriously, the realization of a successful energy poverty approach will remain very challenging (Feenstra, et al., 2021). Furthermore, the multidimensional character of energy poverty is not part of the policy documents. When mentioning energy poverty or the energy poor it is mostly in combination with finances or energy efficiency while the emotional and spatial side of the problem are not acknowledged. Regarding the gender aspect of energy poverty, none of the documents mention this implicitly or explicitly. Table 5 shows an overview of the policy analysis in which minus (-) denotes the lack of the specific subject, while plus (+) denotes the presence of the specific subject.

	NECP	RES 1.0 & 2.0 Groningen	WTP Groningen
Production and Consumption	+	+	-
Finances	+	+	-
Emotions	-	-	-
Spatiality	-	-	+
Roles and Responsibilities	+	+	+
Gender	-	-	-

Table 5: Overview of policy analysis results (source: The author, 2023)

## 4.2 Living in energy poverty

This section will answer the second sub-question: *How do women experience energy poverty in their daily lives in Groningen?* To answer this question, a total of 12 women were interviewed about their mundane experiences of living in energy poverty. 10 of these were part of the focus group and the other 2 were one-on-one conversations. This results section is divided based on the categories also present in the interview guide: causes, implications, coping practices, governmental approach, and gender roles. Furthermore, these topics were also discussed with the experts to broaden the picture. Each section will be discussed both from the point of view of the women and that of the experts.

First of all, it is important to introduce the women and shortly explain their situation, in order to be able to understand the whole picture of living in energy poverty. All women were adults, approximately between 30 and 65 years old, and are living in Groningen. There is a wide variety in the personal situation of these women, some of them had children and a spouse, one of them was a single mother, one of them did not have any children or a partner, and some of them had adult children who did not live at home anymore. Moreover, the interviewees are of different cultural and ethical backgrounds. Almost all of them live in rental housing owned by a housing corporation. And while most of them had jobs, a few of them did not. The following table shortly specifies the context of all 12 women.

<b>Persona*</b>	<b>Context</b>
Asha	Asha does not have any children and lives with her husband. She is working part time.
Ida	Ida has children whom have already left the house. She now lives with her husband and she is retired.
Fatma	Fatma lives together with her family (husband and small children). She is currently unemployed.
Alisa	Alisa has small children, a husband, and is working.
Malti	Malti does not have any children and lives with her husband.
Inge	Inge has older children whom do not live with her anymore. She lives with her husband. Employment status is unknown.
Jasmijn	Specific situation not known
Liani	Liana has small children, a husband, and is a stay at home mother.
Berrin	Berrin has two children whom are not living with her. She lives with her husband. Employment status is unknown.
Samya	Specific situation not known.
Sara	Sara has no partner nor any children and is working.
Roos	Roos is a single mother of two children and self employed.

Table 6: Context information interviewees women (source: The author, 2023) \*Not their real names

The first 10 women were part of the focus group interview. These women already knew each other, which was very obvious during the conversation. All of the focus group participants had non-Dutch backgrounds and some of them hardly spoke Dutch. However, there was a big sense of belonging within this group, as they helped each other formulate their answers. Because they seemed so comfortable with one another they were all very open when speaking to me, sharing with me their sometimes very distressing experiences about living in energy poverty. Some women were more explicitly present during the interview and there were others who were more quiet. But, by also observing non-verbal communication the more quiet women were also a valuable addition to this research.

#### 4.2.1 Causes

When discussing the causes of living in energy poverty with the women there is consensus about the two most direct causes: living in badly insulated dwellings and an increase of energy expenditures. At first glance, these seem like the main causes according to all women. However, when diving deeper into the possible causes and the concept of energy poverty in general, it becomes clear that it is not as simple as ‘just’ having high energy costs and badly insulated houses and the multidimensionality of energy poverty pops up. One interviewee explained that for most people living in energy poverty is due to an accumulation of multiple aspects. For example, Sara had been a cancer patient during the covid-19 pandemic and was luckily declared cancer free relatively quickly. But due to her high health expenses and her focus on surviving, she did not have the time and energy to search for a new energy contract and was thus surprised by a sudden increase in her energy bill. This explanation of energy poverty being caused by a multitude of issues was agreed with by Sara as she mentioned not having a financial buffer due to the covid-19 pandemic as one of the causes.

Moreover, even though all women had, at least to some degree, knowledge of the combination of different causes resulting in them being energy poor, everyone also mentioned being surprised by the high energy costs and not knowing where these high numbers came from. In other words, they were to some degree caught off guard:

*“It [the high energy bill] really shocked me. I thought, wow. It was just shocking.”* - Sara (02/06/2023)

This was also mentioned during the interviews with both energy coaches from the municipality (they give people personal advice and tips on how to save energy). In their experience, one of the main reasons why people become energy poor is also the unawareness of people’s own energy consumption and energy behavior. Especially people who are not ‘used to’ poverty in general but who did end up in energy poverty ended up in this situation partly due to this lack of awareness, according to the experts. For this group of people, the rising energy costs were the last push towards a situation of poverty. While for people already experiencing poverty, energy poverty came on top of their already existing issues. The energy coaches articulated these differences in the following quotes:

*“How I think it originated with them is because they used energy unquestioningly before and were not aware of the price, because the prices were relatively low’. And then when the prices skyrocket they suddenly had to pay €1400 instead of €180 and did not understand where that difference came from.”* –Expert 5 (05/06/2023)

*“Sometimes the problem is that people do not realize that what they are doing causes them to use a lot of energy. Some people use an electric heater day and night, which uses a lot of energy. But if you do not know this, you are not going to figure that out.”* –Expert 4 (05/06/2023)

#### 4.2.2 Implications

Living in energy poverty has far-reaching consequences on the mundane realities of these women. One of the interviewees made the comparison that last winter *“energy poverty was being discussed in the same way as the weather is”* (Roos, 06/06/2023). With this statement, she made clear that energy poverty was a very pressing issue for a lot of women past winter.

The mundane implications can be subdivided into four categories: a) coping practices, b) mental health issues, c) physical health issues, and d) indirect consequences. The following sections will give the results per category.

#### a) Coping practices

Sometimes without them even knowing, all interviewees took part in some form(s) of coping practices to deal with their energy poor situation. The most common coping practice among the women is turning down, or entirely turning off, the heating. To compensate for this lack of warmth it is common to wear warmer clothing, and wrap yourself in a blanket. In addition to this, a majority of the women admitted that it sometimes occurred that they needed to cut spending on other necessities. This mostly happened on groceries, specifically in combination with the overall inflation of products. This resulted in generally eating less healthily due to these products being more expensive compared to less healthy food. Impacting one's overall health.

*“You are going to buy more unhealthy food, which in general makes you less healthy.”*  
– Fatma (22/05/2023)

*“Groceries are sometimes 30% more expensive. You really have to think about what you can buy and what you are going to cook.”* - Liani (22/05/2023)

The experts told similar stories from their professional experience. Again, turning down, or turning off, the heating was the most important coping practice noticed by the experts. Moreover, cutting on groceries was also familiar to them. Stories of children not getting anything to eat to bring to school were among the very distressing stories told by the experts. Interesting was the distinction one of the energy coaches made between how people deal with the situation of energy poverty. According to this expert, based on their experience, a distinction can be made between people who are familiar with poverty and those who are not, and their way of dealing with their situation. People who are not familiar with poverty, but did end up in a situation of energy poverty are very rigorous in their ways of dealing with the situation, while the already familiar with poverty group tend to act less fiercely:

*“I do feel like the people who are all of a sudden energy poor, cut everything off very rigorously. While people who are already living in poverty are taking action, but they are also not very aware that they are using a lot of energy in general.”* –Expert 5 (05/06/2023)

#### b) Mental health issues

The most influential impact of living in energy poverty on the daily life of the interviewees are mental health issues. Especially feelings of stress were a direct result of living in energy poverty according to the women. All 12 of them immediately mentioned stress when asked what the mundane impacts were. A whole range of emotions was mentioned during the interviews. These emotions are anxiety, anger, shame, hopelessness, uncertainty, and injustice. The overarching consensus between all interviewed women was that being energy poor resulted in less head capacity for other things in your life. In the worst cases, people are trying to survive:

*“I was living from day to day in complete uncertainty.”* –Sara (02/06/2023)

Emotions of uncertainty and hopelessness go hand in hand. Especially at the beginning of the winter of 2022/2023, it was unclear what was going to happen with the energy prices and the governmental measures were also not clear yet. These uncertain external factors in combination with the unawareness of one's energy behavior resulted in feelings of hopelessness, injustice and, feeling like a victim. So, instead of having control over their own life, it could feel like being energy poor was happening to them:

*“I felt like a victim. Normally I am quite down to earth, but this was even beyond me.”*  
-Sara (02/06/2023)

Opening up the discussion, Roos (06/06/2023) explained that the experience of living in energy poverty showed her how vulnerable and unfair our whole society in general is. Due to this, she does not have the feeling that there is something to fall back on when things go wrong. Moreover, the unfairness of not being able to be comfortable and warm in your own home, while less essential items like phones, are in comparison less expensive is not right according to her:

*“So the stress is more about seeing how we as a society are very vulnerable. I can't go to work full-time as a single mother either. So if something goes wrong, what do I have to fall back on.”* –Roos (06/06/2023)

This picture of high-stress levels due to energy poverty is something the experts also notice. The experts that have one-on-one conversations with women living in energy poverty see that it is a sensitive topic to talk about for people, but that they usually do find it comforting to have someone to talk to:

*“You do notice very often that when people start talking about it that it really affects them. And they also find it difficult to talk about it.”* –Expert 5 (05/06/2023)

Feelings of shame about being energy poor are not experienced by all the women. Specifically, the women from the focus group do not necessarily feel shame about their situation. These women spoke about their situation and struggles remarkably easily and did not seem to be held back by shame when telling me their stories. It was also notable during this conversation that this group was a safe space for all these women. This became clear by for example hearing them speak to one another about their children and other personal issues and situations. So, in general there seemed to be a lack of shame within the focus group. This is probably due to them all being in the same situation and recognizing each other's stories and situations:

*“I think we all experience the same problem, that is why we do not feel ashamed.”*  
- Asha (22/05/2023)

However, the other two women did recognize feelings of shame, also in their social surroundings. This is also what the experts see within their professional role. Also, these feelings of shame are a big barrier as to why people might not seek the help they need:

*“I know a group of people who just do not want to be associated with that (energy poverty) out of shame. And thus they stay under the radar.”* –Expert 6 (07/06/2023)



Because of all these negative emotions, friction within the household is more common, according to some of the women. Arguments with their partner about what to do but also in general arguing more due to the stress, were given as an example. In addition, multiple women confirmed having trouble sleeping due to these high levels of stress which negatively influences their ability to concentrate and focus on other important tasks.

c) Physical health issues

Next to mental health issues, energy poverty can also have physical health implications for those living in these conditions. Due to the cold and high humidity in the, usually, badly insulated houses, there is a high chance of mold forming. Living in a cold dwelling with mold has negative impacts on your health. Most of the women, and also their families, did thus experience being more prone to getting a cold last winter. When discussing these health impacts, the women almost shrugged their shoulders because it had become so normal to them and part of their mundane reality.

d) Indirect consequences

In addition to the direct impacts of living in energy poverty, it became clear during the interviews that a big part of the impacts might also be indirect. For example, due to the high humidity other uncomfortable situations were mentioned, such as clothing that stayed damp after washing. This is a small example of these women generally being less comfortable in their own homes. Also, due to the high levels of stress and other negative feelings, having trouble sleeping and concentrating, other areas in one's life, such as work, are also impacted. Which then in turn increases stress levels and sleeping habits. This way a vicious circle is created which is difficult to break. This is not only the case for the women themselves, but also for their children. Worries about them having trouble sleeping and concentrating at school due to the overall ambiance at home were mentioned multiple times during the conversations:

*“Children do not get breakfast, they go to school anyway, are less able to concentrate, are excluded because they look different and may not have eaten.” –Expert 6 (07/06/2023)*

In the long term, this will only increase the gap between the rich and poor:

*“Our children are not going to perform better in school due to this. So those rich kids get richer and smarter and our kids do not. If your child does not get enough to eat or only eats only unhealthy, their brain is not going to work optimally.” - Ida (22/05/2023)*

#### 4.2.3 Gender (roles)

When the women were asked the question if they feel like women generally experience and deal with energy poverty differently compared to men they all wholeheartedly said yes. According to them, this is due to a combination of aspects. Firstly, women have, more often than men, caring responsibilities for their children. This has two consequences, being home more to care for the children and thus having less time to do paid work. Both of these make that women have a higher chance of becoming energy poor.

*“More women still have caring responsibilities for their children. Which they worry about. And they are, on average, more often at home than men.” –Roos (06/06/2023)*

*“Of course, there are more and more women who also work, and where it is equally divided. But especially if you look at society as a whole, for example at families with different social-cultural origins, it is still much more common for the woman to take care of the children at home while the man is working.” –Roos (06/06/2023)*

Moreover, during the conversations, it became clear that the interviewees think that women handle living in energy poverty differently than men. In Sara’s neighborhood a sort of get-together was organized last winter by the WIJ-team with energy poverty as the overarching theme. She mentioned that the majority of attendants at these evenings were women. When asked what a possible explanation for this could be she said that she thought women might feel the urge to talk about their issues more compared to men. Also, during the focus group gender roles became clear regarding coping practices. One of the women told me that she had fights with her husband about her decision to turn down the heat, which he did not entirely understand. When telling this story, the whole group started laughing out of recognition as this was something almost all of them had experienced before. This example shows that women tend to undertake coping practices to deal with their energy poor situation.

The experts were less immediately convinced about the gender aspect of energy poverty. However, during the conversation, all experts realized that there is indeed a difference between men and women regarding energy poverty. This was most apparent within the number of men and women the experts encountered during their work. For example:

*“I do find it striking that when you asked how many people had requested the klushulp (help with doing chores related to small energy-saving measures) I realized that those were almost exclusively women. This may also be because men can either do it themselves or do not want to admit that they need help. I do not know what is behind it.” –Expert 2 (01/06/2023)*

In addition, Expert 4 (05/06/2023), one of the energy coaches, noticed that in general, she spoke to more women than men and that the people who acted very rigorously were mainly women:

*“The funny thing is that the people who turn everything off and were very rigorously were women. And men were more like, ‘If I try this, we’ll see how it goes.’” –Expert 5 (05/06/2023)*

An explanation for this difference was given by Expert 6 (07/06/2023). According to his experience as a community worker in a neighborhood in Groningen, women tend to ask for help sooner than men. This could also have to deal with the possibility that men approach energy poverty more business-like, while women get in a care mode:

*“I think men take a more business-like approach to energy poverty in general. And women are in their care mode, especially if they have children.” –Expert 6 (07/06/2023)*

#### 4.2.4 The governmental approach

The last subject discussed with the respondents was their opinion about, and their experience with, the governmental approaches aimed at tackling energy poverty. The overarching emotion when discussing this topic was a feeling of injustice. The women from the focus group expressed their belief that the governmental officials have no clear idea of what it is like to live in energy poverty and what they have to deal with daily:

*“The government should live in a situation like ours for six months.” –Asha (22/05/2023)*

This feeling of not being seen is reinforced by the communication of the government. The examples the women gave mostly showed their lack of satisfaction with municipal communication. For example, multiple women mentioned the difficulty of getting someone from the municipality on the phone who could help them and explain their options to them. Moreover, Sara (02/06/2023), told a story of one of the information leaflets distributed in her neighbourhood. This specific leaflet was about ways in which you could save energy in your home. One of the suggestions was to put your heating at 18 degrees, however, she explained that for the majority of the inhabitants of her neighborhood doing so was not an option as it would cost them a fortune. This gave her the idea that the government did not recognize how distressing the situation was for a big group of people. Experiences like these resulted in anger among the women. Anger about the situation in general, but also about, in their opinion, the slow pace at which the government came up with the measures. On a more positive note, during the conversations, it became clear that good use was made of the measures taken by the government such as the energy surcharge. Roos (06/06/2023), mentions that this is probably due to the extensive media attention it has gotten. But a measure such as the energy coaches, which could well be very useful for a lot of people, was not used as much. According to Sara (02/06/2023), this could be due to the promotion of the measure or due to suspicion among the population.

### 4.3 Gendered energy poverty from an expert point of view

The following section is, contrary to the section above, not focused on the mundane realities of living in energy poverty. Rather, it dives deeper into the way local energy poverty experts are dealing with (gendered) energy poverty in Groningen. To get multiple perspectives on this, experts with different roles and responsibilities are interviewed, from policy officials from different governmental levels to a community worker. This part of the results is structured in the following categories: the governmental approach and its obstacles, gender (roles), and long-term vision.

#### 4.3.1 The governmental approach and its obstacles

Within Groningen, there is a sort of hierarchy regarding the energy poverty approach. The Province of Groningen mostly takes on the role of supporting the Groninger municipalities where needed and the organization of knowledge-sharing opportunities. The municipality of Groningen has the most tools in order to lead the approach:

*“As the province, we do not have a legal obligation. Basically, the municipalities are in the lead. They also get the resources for the approach.” –Expert 3 (31/05/2023)*

And while the municipality has the most tools, the policy employees of the municipality focusing on energy poverty do not necessarily speak to people living in energy poverty themselves. The real intel about the mundane reality is seen by the energy coaches (who are part of *Duurzaam* (sustainable) Groningen, an initiative of the municipality of Groningen). These energy coaches visit, on request, people at home and thus get to speak to people living in energy poverty about their experiences. The community worker is a trusted person in the neighborhood and people confide their stories to him. This way, he also has an accurate idea of what it is like to live in energy poverty.

Regarding the obstacles in the current energy poverty approach, the experts, like mentioned by the women, also give communication as one of the biggest obstacles they are currently encountering. However, for the experts it is not necessarily an issue of ‘difficult’ communication, but more so of not being able to reach the right target audience. Specifically, in combination with the rather complex design of a lot of the regulations, the experts feel like not everyone in need of help is seeking it and or being reached. Moreover, during the interview with the municipality, they expressed that there is a limit as to what they can do to help people. This is due to external and situation-specific factors:

*“You do not have control over everything, you cannot solve it all. Like last winter with the rising energy costs. It also just depends on what kind of energy contract someone has.”* –Expert 1 (01/06/2023)

As to the discussion about the difference between energy and energy poverty, the opinions were divided. The experts explained that energy poverty has been a separate subject within the province and municipality for approximately 1,5 years. However, the question as to whether it should remain a separate subject or should be included in the general poverty policy is increasing again. The difference between the two sometimes leads to confusion amongst the people working in energy poverty:

*“There is so much overlap between energy poverty and poverty that it is sometimes confusing that they are two separate areas currently.”* –Expert 2 (01/06/2023)

If energy poverty will remain a separate policy subject in the future, according to the experts, depends on the gas prices and on if the national government will keep giving money for this specific purpose. The community worker is convinced that energy poverty should not become part of general energy poverty policy as it will most likely be shadowed over:

*“If it is going to be part of the general poverty policy you will have to deal with bureaucracy again and it will be overshadowed. While energy poverty really is a big problem.”* –Expert 6 (07/06/2023)

The municipal experts are more nuanced. They think energy poverty will stay a separate subject, even if the governmental funding will decrease in the future, but less so than it is now. They expect there to be a focus shift from the small energy-saving measures currently widely deployed to the larger energy transition issues.

#### 4.3.2 Gender (roles)

As mentioned before, all experts realized that there is indeed a gender aspect to energy poverty. However, especially for the governmental experts, this way of looking at the issue was entirely new:

*“This is an angle from which we do not look at it [energy poverty]. We do not think this way at all. It has also never occurred to me to make a distinction between men and women. But I do understand your point of view.”* –Expert 2 (01/06/2023)

In practice, this meant that the current measures taken by the government do not include gender. There was one example of the municipality where they organized an information session on how to save energy in collaboration with the women’s center Jasmijn. However, the goal of this session was to reach non Dutch-speaking people, not specifically women. So there was no conscious decision to reach specifically women. Furthermore, one of the energy coaches explained that it sometimes occurs when a woman specifically requests a female energy coach to visit (Expert 3, 31/05/2023). But other than this, also the energy coaches do not take into account the gendered aspect of energy poverty. When asked if they thought gender should in the future be part of energy poverty approaches the experts were hesitant. This hesitation came, partly, due to the sensitivity around gender and gender roles:

*“I do find it difficult sometimes. Also when speaking of generalizing. We try to use ‘dear sir or madam’ as little as possible but rather use dear resident. So yes, I do struggle with that.”* –Expert 2 (01/06/2023)

Moreover, the experts are currently focused on reaching the people in need of help in general, without spending time and energy on reaching specific groups:

*“Our primary concern is how to reach the people in general.”* –Expert 4 (05/06/2023)

#### 4.3.3 Long-term vision

Currently, there is no long-term governmental vision regarding energy poverty and it is not clear what will happen if and when the energy prices decrease again. The measures taken by the government are rather ad hoc and slow:

*“And they do their best and are willing. But it just takes a long time before it gets going.”* –Expert 6 (07/06/2023)

When the experts were asked what they would like to see differently, the community worker mentioned that the government officials should visit the places where the everyday lives of these people are taking place, think about the *voedselbank* (the food bank). By doing so, the civil servants will create a better understanding of what it is like to live in energy poverty while simultaneously people living in energy poverty will feel seen and heard. Moreover, one of the energy coaches explained that right now they normally only visit someone once. Even though a second visit could help people gain confidence in their energy-saving behaviour. This is something the municipality is currently already working on.

## 5. Discussion

This chapter will focus on the discussion of the results from the previous chapter. The main aim of this chapter is to interpret and relate the results to the theory. The most striking findings of this research are not necessarily about the mundane realities of women living in energy poverty as these mostly correspond with the literature. This, however, does not mean that the stories of these women are less important because it remains crucial that the everyday aspects receive attention within the academic world. The findings discussed in this chapter relate to gender roles, the multidimensionality of energy poverty, and a just energy transition. Lastly, the positionality of the researcher asks for a thorough discussion as well.

### 5.1 Gender roles

In the entire results section, the importance of gender roles in our society becomes apparent, also in relation to energy poverty. Generally speaking, this supports the theoretical findings, however, some specific aspects of these gender roles were more present during the interviews in which the women told their everyday experiences with energy poverty than others. The *five dimensions of gendered, socio-spatial vulnerability to energy poverty* by Robinson (2019) (Figure 4) show the relationship between gender roles and energy poverty. When looking at the five dimensions, some were explicitly mentioned by the women, while others implicitly came up, and again others were not mentioned at all. It turns out that the impact of the caring roles of women is twofold. Firstly, in accordance with the literature by Middlemiss (2022) and Robinson (2019), these caring responsibilities result in women being at home more and thus being exposed more to the mundane realities of living in energy poverty. Secondly, the responsibility these women feel towards their children to take action and mitigate the consequences of energy poverty results in them partaking in coping practices, such as turning down the heating and cutting spending on other necessities. According to Petrova and Simcock (2021) and Middlemiss (2022), this specific type of coping practice is explained to be gendered, which aligns with the findings of this study.

Coming back to the capabilities approach (Sen and Nussbaum, 1993; Day et al., 2016), based on the results of this research, it can be concluded that women bear the burdens of a lack of domestic energy services (space heating, lighting, etc.) due to energy poverty. This lack of energy services results in a decrease in women's capabilities (opportunities), thus negatively impacting their functionings, such as good health. This is, again, in close relation to gender roles as explained before. As these also negatively impact women's capabilities due to them having less time to do paid work (which is an example of a functioning influencing human wealth and wellbeing) (Day et al., 2016).

The results also show that indeed living in energy poverty has mental health impacts on the daily lives of women. Feelings of stress, anger, uncertainty, and insecurity were experienced by all women. However, even though the literature mentions feelings of shame as an important consequence (Middlemiss, 2022), this was not experienced by all women. Specifically, the women in the focus group did not experience shame, in contrast to Roos and Sara. This could possibly be explained by the social relations of the women. As mentioned by Broto (2019), the gender dimension of energy poverty varies across different social, cultural, and economic contexts. Also, having a social support system can very much help people living in energy

poverty deal with the problems related to energy poverty (Longhurst and Hargreaves, 2019). It was clear that the group of women from the focus group were very comfortable with one another and felt supported by each other. I would go as far as to say that some of these women were friends. Moreover, they mentioned not feeling shame because they were all in the same situation. So, these women did have a warm and comfortable social support system with whom they could discuss their issues, resulting in a lack of feelings of shame. This once again shows that the consequences of living in energy poverty differ per person and are sensitive to contextual factors, such as social relations.

## 5.2 The multidimensionality of energy poverty

Reflecting on the multidimensional character of energy poverty as established in the theoretical framework, it can be stated that in practice this character is very evident. As mentioned in the results section, when speaking of their everyday realities and causes of energy poverty there usually was not one specific reason but an accumulation of causes. In most cases, this came down to badly insulated dwellings, high energy prices and high energy consumption of which the users were not aware, and low income. This aligns with the most commonly mentioned causes of energy poverty in the literature (Mulder et al., 2023). But this research shows that other external factors, such as high inflation, having no buffer due to Covid-19, and being dependent on a landlord or housing corporation, are also potential causes. Moreover, the multidimensionality was also evident in the consequences for these women living in energy poverty. Here, the emotional component was mostly visible in feelings of stress, anger, uncertainty, and hopelessness. So, the stories of these women confirm the multidimensional character of energy poverty, both in terms of causes and in terms of consequences.

The experts also touched upon this multidimensionality during the interviews. Also, both relating to the causes and the consequences. Thus, it is known that energy poverty is not only a financial or insulation problem. However, the policy analysis shows that this knowledge is not being translated into policies encompassing all different components of the issue. Within the policies and measures of the government, the emphasis is still on the material/technical and economic components of energy poverty. More or less neglecting the emotional and spatial aspects. Also, the current measures taken by the municipality of Groningen specifically focus on the material (insulation and energy saving techniques) and economic (funding) aspects. The lack of focus on these other components might be due to the absence of a long-term vision regarding energy poverty as financial and insulation measures are tools the government can deploy more easily than measures focused on the emotional component of energy poverty.

## 5.3 General poverty versus energy poverty

This lack of long-term vision brings us to the next discussion point, poverty versus energy poverty. The results section illustrates the current discussion of whether energy poverty needs to remain a separate topic or that it should become part of general poverty policy. This dialogue is not entirely surprising when looking at the overall discussion and vagueness surrounding the topic of energy poverty as explained in the theoretical framework. Because even though research into this topic has increased significantly over the past years, there is still much discussion about what energy poverty is, when someone can be classified as energy

poor, and what is needed to tackle it. This whole discussion is even more complicated due to the temporal character of energy poverty as explained by (Robinson et al., 2018; Thomson et al., 2017), meaning that someone can move in and out of energy poverty over time. However, without a long-term national vision regarding energy poverty municipalities will remain uncertain about how to deal with it. Thus, energy poverty should, also in the future, remain a separate issue.

The anger, injustice, and uncertainty the women raised during the conversations could also possibly be, partly, due to this lack of vision. Creating a long-term vision could give the women a sense of understanding instead of the measures being rather ad hoc. By doing so, the government shows that energy poverty is being taken seriously, which could potentially take away some of the anger and uncertainty for the women living in energy poverty. The difficulty in this situation is the interaction between a long-term vision and the discussion around energy poverty and its definition. On the one hand, to be able to draw up a successful long term-vision, the questions and vagueness around energy poverty need to be minimized. Moreover, looking at the approaches in other Western European countries about energy poverty is advisable. However, on the other hand, creating a long term-vision will help guide the discussion and thus the answers to these questions. This once again shows the complexity of the issue at hand. Moreover, energy poverty is not something tackled with a quick fix but asks for a considerate and well thought-approach.

#### 5.4 A just energy transition

Another reason why energy poverty needs to remain a separate theme and needs to keep getting attention from policymakers, is its connection to the wider societal issue of the energy transition. During the interviews with the women, the concerns for their children became apparent due to them not being able to concentrate at school because of their home situation of energy poverty. Specifically, the concern that the gap between the richer children and their children will increase was mentioned. Placing this in the wider framework of the energy transition towards sustainable forms of energy, this concern is understandable as the energy transition increases the already existing societal inequality (Mulder et al., 2023). Moreover, this also has to do with people in energy poverty not being able to make the necessary investments to insulate their homes due to them either not having the resources to do so, or not being able to make these decisions because of landlords or housing corporations. This also connects to the vicious circle some of the women mentioned. Once living in energy poverty it is difficult to get out of it due to the consequences reinforcing each other. To prevent this, policymakers should focus on a just energy transition of which addressing energy poverty is an important aspect, as also voiced in the Sustainable Development Goal number 7.

#### 5.5 The positionality of the researcher

The last discussion point focuses on the positionality of the researcher within this study. Positionality reflects what the researcher knows and believes and views the world. According to Bourke (2014), the (unconscious) bias of the researcher, shaped by their own experiences, influences the research process. This is of specific importance for this study because the focus of this research lies on personal experiences and beliefs. Interpreting and analyzing the interviews and results, in terms of both verbal and non-verbal communication, the positionality of the researcher automatically influences these. When positioning myself in



relation to the research topic two main things immediately become clear. Firstly, as a woman myself I understand the issues of the typical gender roles raised by the women based on my own experiences of being a woman. However, this instantly touches upon my second point, which is that I am aware that I have been fortunate my whole life. From growing up in a family where poverty has never been an issue to studying at the University of Groningen. Moreover, I am very conscious of the social 'bubble' I am part of in which very few people have experience with real poverty, making me an outsider within this area. Issues such as not having enough food and thus not being able to concentrate are not known to me. I am aware of both of these issues and recognize that these may result in biases when interpreting the results.

## 6. Conclusion

This chapter will provide an answer to the main research question. First of all, the key findings of the research will be presented. After which recommendations for potential further research are elaborated on. Lastly, the implications of the findings for planning practice are discussed, including policy advice.

### 6.1 Key findings

This research was aimed at shedding light on the impacts of living in energy poverty on the daily lives of women. Moreover, this research tried to investigate how (gendered) energy poverty is currently being dealt with by policymakers. Thus, the following main research question was formulated:

*How do women experience and navigate the mundane realities of living in energy poverty?*

The central question is focused on the consequences and coping practices on the everyday lives of women. The research shows that energy poverty is indeed a multidimensional issue, both in its causes and in its consequences. Specifically, mental health issues due to emotions such as stress, anger, uncertainty, and anxiety are something the women have to deal with on a daily basis. And even though not all of the women recognized feelings of shame themselves, it was mentioned by both the experts as by some of the women in relation to energy poverty. With the importance of social relations and having a safe space as a reason to why some of the women might not be feeling ashamed about their situation of energy poverty. Moreover, physical health issues due to high humidity resulting in mold forming are also part of the mundane realities when living in energy poverty. Furthermore, living in energy poverty can have far-reaching consequences trickling down on other parts of life. For example, children not being able to concentrate at school due to their home situation. Regarding coping practices, the women mostly decided to turn down or entirely off the heating, sometimes at their own expense so when their children were home the heating could be turned up a little. Another coping practice applied by some of the women was to cut spending on other necessities such as food. Regarding the causes of becoming energy poor, the multidimensional character of the issue became apparent. Simply put, there usually is not one specific main cause as to why these women became energy poor. Rather, a combination of multiple aspects, such as income, bad insulation, inflation, COVID-19, caring responsibilities, and high energy consumption and costs, is typically why these women got into a situation of energy poverty. With each situation and combination of (external) factors being different from another. Stereotypical gender roles were a central thread throughout the entire research. These gender roles do impact the way women experience energy poverty while also influencing their vulnerability to becoming energy poor. Especially the caring responsibilities women have for their children, resulting in them having less time for paid work and in them being at home more, turned out to make them both more vulnerable to becoming energy poor and being more vulnerable to the negative impacts of living in energy poverty. Moreover, the way women handle their energy poor situation also shows aspects of stereotypical gender roles. For example, it seems like women more easily ask for help when living in energy poverty compared to men, maybe due to them feeling very responsible to deal with the situation (specifically for their children). Thus, although the research was able to identify multiple common negative

emotions related to energy poverty, it also showed that the causes and consequences differ per person and are very context specific. These key findings provide insight into the mundane realities of women living in energy poverty.

The second part of the research focused on the governmental and policy aspect of (gendered) energy poverty. Regarding this, the most striking outcome of this research is the fact that the (policy) experts recognized that there might indeed be a gender dimension to energy poverty. This became evident in the number of women the experts saw and spoke to compared to men in their work as energy poverty experts. However, both interviews with the experts and the policy analysis showed that gender is currently not taken into account within the policies and measures aimed at tackling energy poverty. For governmental officials and policymakers this is a difficult topic because gender in general is a sensitive topic. Moreover, the lack of a long-term energy poverty vision results in vagueness and discussion about the question of whether energy poverty should remain a stand alone policy topic or if it should be part of general poverty policies. Due to the uncertainty surrounding the gas prices and the situation in Ukraine it is not clear for the governmental officials working on this topic what will happen once this crisis has passed. Furthermore, this not only affects the experts but also the women living in energy poverty. Due to this lack of vision the women also experienced high levels of uncertainty and thus stress, last winter. This research shows that there are multiple reasons as to why it might be advisable for energy poverty to remain a separate policy issue and why a long-term energy poverty vision might be a good idea. Firstly, a long term energy poverty vision will take away some of the vagueness and uncertainty for policy makers, giving them guidelines as to how to act accordingly. Secondly, by creating this long-term vision, possibly some of the anger and uncertainty experienced by the people living in energy poverty can be taken away. This way, the government can also show the individuals dealing with energy poverty that the issue is taken seriously. Thirdly, in light of the energy transition and its success, everyone must be able to participate in this transition, which is also made clear in Sustainable Development Goal 7. Not only because of the importance of the energy transition for the world and society as a whole but also because if not everybody can participate, the transition can increase the already existing societal inequalities. When specifically looking at the current energy poverty measures, this research shows that the focus of these measures is on the material and economic multidimensional components of energy poverty, while the emotional and spatial components are neglected.

## 6.2 Further research recommendations

Regardless of the limitations of the study (see section 7.1), this research was able to show, at least partly, what it is like for women living in energy poverty and the mundane realities they have to deal with. Future research with a larger data set could provide results based on a stronger foundation of data. Especially since this research showed that the realities of energy poverty are very context-specific and differ per person or household, more qualitative research into the mundane realities of energy poverty is advised. Also, further research could study the connection between gender and energy poverty more extensively. For example, a comparative study in which both men and women are interviewed and observed could be useful.

Moreover, the results from this research show that gender is currently not part of energy poverty measures in the Netherlands. Therefore, future research could investigate in what ways gender could potentially be part of the policies and how this then can be implemented.

Also, research into the long-term effects of living in energy poverty can create a basis for a long-term energy poverty vision.

### 6.3 Implications for planning practice

By studying the lived experiences of energy poverty, this research tried to add to the theory and decrease the gap visible between policy measures and the lived experience of energy poverty. By focusing on women the gender dimension of energy poverty was also highlighted. When putting this research in the larger societal perspective, it touches upon reasons why energy poverty should remain a point of attention and needs a long-term vision. Moreover, the connection between energy poverty, a just transition, and the energy transition is also apparent in this research. By doing so, this research provides lessons, insights, and maybe even directions for governmental bodies to continue the search on how to tackle energy poverty. It must be taken into account however, that the outcomes of this research reflect the specific case of Selwerd and Groningen, the Netherlands, in general, and thus may not be entirely applicable in other situations. Moreover, this research once again shows the complexity of energy poverty due to its multidimensional character. However, translating this from theory to practice can be challenging.

Despite this, a policy recommendation that can be made based on this research is the creation of a longer-term vision regarding energy poverty. Thus keeping energy poverty as a separate policy focus and not making it part of the general poverty policies. Within this vision, besides financial and technical measures, the emotional component of energy poverty should receive more attention. This could for example be done through the active stimulation of emotional support options, think about support groups where people dealing with energy poverty can tell their story and get tips and tricks. This could create a similar situation as with the focus group, in which people feel comfortable sharing their stories resulting in them having some form of a social support system. For this to be successful, closer collaboration between the municipality and the WIJ-teams is advisable due to the WIJ-team being a point of contact within the neighborhood.

## 7. Reflection

In this final chapter of the research, a critical reflection on the research methods and process is provided. By doing so, limitations and points of improvement of the study are identified.

### 7.1 Reflection on the Research

At the beginning of this research, I aimed to collect a substantial number of in-depth individual interviews with multiple women. However, due to the difficulty of getting access to the research field, which happened by contacting so-called gatekeepers, this turned out to not be achievable within the time frame of this research. Furthermore, as this research shows, women living in energy poverty experience high levels of stress and in turn do not have a lot of headspace for other issues. This could explain why it was difficult to find enough women to speak to about their experiences. Luckily, I was able to organize a focus group. The benefits of this specific focus group were that the participants were familiar with each other and helped one another with phrasing their answers, as some of the women had difficulty speaking Dutch. This also influenced the research data, as without this focus group I would probably not have been able to have conversations with these women because they would most likely not have felt comfortable speaking to me one on one. However, it must be noted that due to these limited numbers of participants, conclusions are thus based on a somewhat limited foundation of data and knowledge. Moreover, when analyzing the data, it was notable that there were many similarities between the overall themes of the women's experiences. This makes me feel confident in drawing these conclusions despite the small number of participants.

Moreover, this study discusses gender and gender roles. And even though it is highlighted within the literature review that gender and gender roles are not fixed (Petrova and Simcock, 2019), this is a delicate subject. Therefore, generalizing the results from this research is difficult.

Lastly, because of the difficulties in the data collection process regarding the women, more energy and time could be put into searching for and interviewing experts. This has resulted in a wide variety of perspectives within this study. The concept of energy poverty and gender have thus been discussed and analyzed from multiple angles resulting in the conclusions being a broader picture than first imagined.

### 7.2 Personal reflection

Lastly, this section focuses on my personal reflection. Looking back, I have experienced quite some ups and downs during this research process. Firstly, creating a well-put-together framework for this thesis proved challenging. During my masters, I realized that the energy transition is something I am very interested in. However, figuring out how to incorporate this in my thesis was something I struggled with. It took me quite some time before I figured out what concepts I wanted to include and what the overall design of the thesis would be. As my first idea was mainly focused on government and policy and did not include the gender aspect I had to adjust to this new design. The meetings with my supervisor have really helped me in framing my thesis. In hindsight, I am glad to have included the gender aspect as the conversations I had with the women were, also for me personally, a very valuable experience.

It really reminded me of my fortunate position, and the social ‘bubble’ I live in. These conversations and experiences are something I will take with me during both my personal and professional life.

Regarding the planning of this thesis, I underestimated the busy schedule I had this academic year. This year consisted of three big challenges for me, an internship from September 2022 till February 2023, organizing the Geo Promotion Conference set in March 2023, and of course, writing my thesis for the Master Environmental and Infrastructure Planning. In my head, the peak moments of these three would not fall together, which they did. However, the pressure of these three together really challenged me. I had expected to be able to entirely focus on my thesis from April onwards, however, I underestimated the aftermath of the Conference and maybe in general the ups and downs of life in general. Because of this, I did experience some stress during this thesis process.

The data collection process also proved to be challenging. Finding women who were willing to speak to me proved to be a time consuming-process, and because I had no experience with interviewing people about such a sensitive and personal topic I was rather nervous for the interviews. In retrospect, I would have started looking for interviewees earlier so the interviews could be distributed over time. Instead, most interviews took place in a short period of time which was very intense, time-consuming and cost a lot of energy.

I would again like to mention the valuable experiences of speaking to these women and experts. Also, doing this research has made me realize that the energy transition is something I see myself working on professionally.

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## Appendix A: Interview guide women

### *Introductie*

Hallo, mijn naam is Lieke Mijnheer en ik ben momenteel bezig met mijn masteropleiding in planologie aan de Rijksuniversiteit Groningen. Het laatste gedeelte van mijn opleiding bestaat uit het schrijven van een afstudeeronderzoek, waarvoor wij elkaar nu spreken! Ik wil je daarom nu alvast bedanken voor je tijd en hulp in mijn onderzoek.

In mijn onderzoek kijk ik naar de impact van energiearmoede op het dagelijkse leven van vrouwen en hoe deze ervaringen gebruikt kunnen worden in het opstellen van passend beleid.

Wanneer er akkoord is voor het opnemen: Voordat we beginnen wil ik graag nogmaals vragen of u akkoord geeft met het opnemen van dit interview.

U mag mij op elk gegeven moment tijdens het interview onderbreken als u vragen of opmerkingen heeft, of als u het gesprek wilt beindigen.

Heeft u nog vragen voordat we gaan beginnen?

### *Vragen voor vrouwen die energiearmoede ervaren:*

1. Kunt u zichzelf kort introduceren en uw huidige leef situatie beschrijven?
  - Denk hierbij aan uw gezinssituatie, uw werk en onbetaald werk (verzorgende rol) etc.
2. Kunt u mij vertellen hoe u toegang krijgt tot basisvoorzieningen zoals elektriciteit en brandstof om te koken?
3. Hoe en waaraan gebruiken u en uw familie dagelijks energie, en wat zijn enkele van de uitdagingen die u ervaart tot het verkrijgen en betalen van energie?
4. Wat voor impact hebben deze uitdagingen op uw dagelijkse leven en uw vermogen om in uw basisbehoeften te voorzien?
5. Heeft u of uw familie gezondheids- of veiligheidsproblemen ervaren in verband met deze uitdagingen?
  - Denk bijvoorbeeld aan luchtvervuiling binnen het huis (door bijvoorbeeld schimmel door vochtigheid)
6. Heeft u ooit lastige keuzes moeten maken tussen het gebruiken van energie voor basisbehoeften, zoals koken en verlichten, en andere essentiële uitgaven, zoals voedsel of gezondheidszorg?
7. Wat voor emoties voelt u wanneer u denkt aan de energie situatie in uw huishouden? Denk bijvoorbeeld aan boosheid, schaamte, rust of juist onrust
8. Beïnvloeden deze emoties uw dagelijkse leven en/of sociale leven?
  - Denk bijvoorbeeld aan het niet uitnodigen van mensen in uw huis
9. Neemt u maatregelen om uw energie efficiëntie te verhogen?
  - Denk bijvoorbeeld aan het installeren van isolatie of het kopen van energiebesparende apparatuur
10. Heeft u ooit assistentie of ondersteuning ontvangen van overheids- of niet-overheidsinstanties om in uw energiebehoeften te voorzien?
  - Zo ja, wat was uw ervaring hiermee?

- Zo niet, bent u bekend met de gemeentelijke initiatieven ter ondersteuning van uw energiebehoefte?
  - Zo ja, zijn er moeilijkheden waardoor u deze initiatieven niet gebruikt?
  - Zo niet, de Gemeente Groningen heeft een platform genaamd Duurzaam Groningen waar u gratis een afspraak kunt maken met een energiecoach. Deze energiecoach kijkt samen met u naar de energie situatie van uw huishouden en geeft u op basis hiervan tips hoe u kunt besparen op energie, etc.
- 11. Heeft u ideeën over oplossingen of maatregelen die volgens u nuttig zouden zijn in het bestrijden van energiearmoede en het toegankelijk maken van schone, betaalbare energie voor huishoudens zoals het uwe?
- 12. Op wat voor manieren denkt u dat de aanpak van energiearmoede het dagelijkse leven van vrouwen ten goede kan komen?

*Einde*

Bedankt voor uw tijd en het beantwoorden van mijn vragen! Is er nog een onderdeel waar u graag op terug zou willen komen? Of heeft u wellicht nog andere vragen of opmerkingen?

Als u op een later moment nog vragen of opmerkingen heeft over het interview zelf of over uw deelname aan het onderzoek kunt u altijd contact met mij opnemen.

Nogmaals hartelijk bedankt!

## Appendix B: Interview guide experts

### *Introductie*

Hallo, mijn naam is Lieke Mijnheer en ik ben momenteel bezig met mijn masteropleiding in planologie aan de Rijksuniversiteit Groningen. Het laatste gedeelte van mijn opleiding bestaat uit het schrijven van een afstudeeronderzoek, waarvoor wij elkaar nu spreken! Ik wil je daarom nu alvast bedanken voor je tijd en hulp in mijn onderzoek.

In mijn onderzoek kijk ik naar de impact van energiearmoede op het dagelijkse leven van vrouwen en hoe deze ervaringen gebruikt kunnen worden in het opstellen van passend beleid.

Wanneer er akkoord is voor het opnemen: Voordat we beginnen wil ik graag nogmaals vragen of u akkoord geeft met het opnemen van dit interview.

U mag mij op elk gegeven moment tijdens het interview onderbreken als u vragen of opmerkingen heeft, of als u het gesprek wilt beindigen.

Heeft u nog vragen voordat we gaan beginnen?

### *Vragen voor experts:*

1. Kunt u zich kort voorstellen en vertellen pp wat voor manieren u met energiearmoede te maken krijgt vanuit uw professionele rol?
2. Wat maakt energiearmoede volgens u zo'n lastig aan te pakken probleem?
3. Wat zijn volgens u de (uit ervaring) meest voorkomende aanleidingen voor het leven in energiearmoede?
4. Wat zijn volgens u de (uit ervaring) meest voorkomende gevolgen van energiearmoede op het dagelijks leven van mensen?
5. Denkt u dat mannen en vrouwen energiearmoede anders ervaren/dat er andere aanleidingen zijn?
6. Op wat voor manier is (x organisatie) momenteel bezig met het bestrijden van energiearmoede?
  - Beleidsmatig?
  - Maatregelen voor mensen levende in energiearmoede
7. Wordt er goed gebruik gemaakt van deze maatregelen?
8. Worden gender verschillen hier momenteel in meegenomen?
  - Ja → Hoe?
  - Nee → Denkt u dat dit wel zou moeten?
    - Nee → Waarom niet?
    - Ja → Op wat voor manieren denkt u dat gender wel meegenomen zou kunnen worden in de aanpak van energiearmoede?
9. Wat zijn momenteel de grootste obstakels/knelpunten in de energiearmoede aanpak?
10. Wat zou er volgens u moeten veranderen/wat is er nodig om het aantal mensen levende in energiearmoede te verkleinen?



*Einde*

Bedankt voor uw tijd en het beantwoorden van mijn vragen! Is er nog een onderdeel waar u graag op terug zou willen komen? Of heeft u wellicht nog andere vragen of opmerkingen?

Als u op een later moment nog vragen of opmerkingen heeft over het interview zelf of over uw deelname aan het onderzoek kunt u altijd contact met mij opnemen.

Nogmaals hartelijk bedankt!

## Appendix C: Consent form

### VERKLARING VAN GEÏNFORMEERDE TOESTEMMING

Naam onderzoeksproject: Masterscriptie Lieke Mijnheer

Deze masterscriptie onderzoekt hoe energiearmoede het dagelijks leven van vrouwen beïnvloedt, met name vrouwen woonachtig in Groningen. Het doel van het onderzoek is het opvullen van de onderzoek kloof over de geleefde ervaring van energiearmoede. Met behulp van kwalitatieve data beoogt dit onderzoek betere kennis over de gevoelens, betekenis en ervaringen van energiearmoede in het dagelijks leven te verwerven, met een focus op vrouwen. Dit onderzoek omvat de volgende methoden, literatuuronderzoek, een beleidsanalyse, en semigestructureerd diepte-interviews met zowel deskundigen als vrouwen die energiearmoede ervaren.

U bent uitgenodigd om als geïnterviewde deel te nemen aan dit onderzoek.

Gelieve uw toestemming te geven dat

1. U bent geïnformeerd over het doel van het onderzoek;
2. U heeft spontaan en geheel vrijwillig aanvaard om te worden geïnterviewd;
3. U geeft toestemming voor het gebruik van geanonimiseerde interviewgegevens voor de onderzoeksdoeleinden van het project, inclusief de eventuele publicatie ervan.

Ik verklaar dat het mij bekend is dat:

- Het onderzoek het verzamelen van individuele antwoorden, meningen, en evaluaties omvat.
- elke deelnemer vrij is om opheldering te vragen over de gegevensverzamelingsprocedure en over elk ander aspect van het project;
- elke deelnemer vrij is om de sessie op elk moment te verlaten;
- de eventuele weigering om deel te nemen of het afzien van deelname tijdens de sessie geen negatieve gevolgen voor de deelnemer heeft;
- de voor onderzoeksdoeleinden verzamelde persoonsgegevens niet worden doorgegeven aan derden;
- de verzamelde persoonsgegevens anoniem worden uitgewerkt;
- het onderzoek wordt uitgevoerd in lijn met het onderzoek ethisch beleid van de Rijksuniversiteit Groningen (zie <https://www.rug.nl/about-ug/policy-and-strategy/research-ethics/?lang=en>)

Datum \_\_\_\_\_

Handtekening \_\_\_\_\_

Mocht u van mening zijn dat u tijdens dit interview verkeerd bent behandeld of voor nadere informatie over het onderzoeksproces kunt u contact opnemen met de scriptiebegeleider, Dr. Ethemcan Turhan ([e.turhan@live.nl](mailto:e.turhan@live.nl)), Assistant Professor of Milieuplanning.

