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Women's Work: Making Sense of Energy Poverty through Gendered Social Practices in Kanaleneiland, Utrecht

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‘شكرا!'

Teşekkür ederim!

Summary

In 2022, over half of Dutch households have difficulties paying their general expenses and 602.000 households (7.4% of the total) are estimated to live in energy poverty. Energy poverty – a term popularised in the 1990s – is traditionally characterised as a combination of low incomes, high energy bills and poor quality housing (Boardman, 1991). While official definitions do not (yet) exist, many define it as the inability of households to attain sufficient energy services in the home. In line with perspectives which view ‘energy’ as part of realising social practices (Shove & Walker, 2014), ‘energy services’ refer to space heating (or cooling), cooking, ICTs or the efficiency of domestic white goods. Poor energetic housing conditions due to a lack of insulation or poor maintenance are uncomfortable, but can also be detrimental to physical and/or mental well-being. However, current energy poverty approaches do not (yet) address the highly gendered dimensions of the phenomenon which make women more vulnerable to energy poverty than men. Herein, ‘gender’ intersects with other mutually coexisting personal factors such as age, socio-economic position, health status, and migration-background. Using a social practice approach, this qualitative study makes use of ethnographic fieldwork, (in)formal interviews, and participatory action research (PAR) to study how energy poverty is understood and acted upon through gendered energy practices in Kanaleneiland, Utrecht. Kanaleneiland is a neighbourhood in Utrecht, the Netherlands, with a significant social housing stock, large migrant population, and widespread income poverty problems. This study showcases how a gendered practices perspective can reveal the higher likelihood of women experiencing energy poverty and their role in acting upon it at home. Findings indicate that by association with femininity, low-technical solutions to energy poverty are placed in the female domain, while masculinity is attached to financial or technical strategies. Due to cultural differences and language barriers, informal networks and active citizens were found to be crucial in knowledge transfer and sharing. The disproportionate impacts and responsibilities carried by women make energy poverty a distinct gender inequality problem. To ensure a more inclusive energy transition, recognition of women’s distinctive energy-user experiences, cultural sensitivity through (in)formal networks, and acknowledgement of the structural and systematic inequalities underlying energy poverty is recommended.

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1. Introduction

In 2022, over half of the Dutch households had difficulties paying for their general expenses and 602.000 households (7.4% of the total) were estimated to be unable to afford to adequately heat their homes and/or use basic energy services (Brink-den Nieuwenboer et al., 2023; Mulder, Batenburg, et al., 2023; NOS, 2023). Between 2020-2022, a five-fold price increase in the natural gas and electricity markets occurred due to a combination of political instability in Ukraine and Russia and the dragging effects of post-COVID-19 economic recovery (Belaïd, 2022). As a consequence, the Netherlands is not the only country facing rapid inflation, predominantly of consumer goods like groceries (Belaïd, 2022; Mulder, Batenburg, et al., 2023; NOS, 2023). Across the European Union (EU), countries are not only experiencing an 'energy crisis', but also a 'cost-of-living-crisis' (Eurofound, 2022; Popkostova, 2022). To ensure a fair and inclusive energy transition by 2050, shifting attention towards a policy and monitoring approach which is sensitive to the highly subjective, temporal and dynamic nature of energy poverty is important (Grossmann & Kahlheber, 2017; Middlemiss, 2022; Ministry of Economic Affairs and Climate, 2019). Otherwise, scholars note, vulnerable groups such as women, but also migrants, the elderly and people with a migration background risk being further marginalised (Bokhorst et al., 2022; Bouzarovski et al., 2021; Feenstra, 2023; Koster & Mouissie, 2022; Mulder, Dalla Longa, et al., 2023).

Energy poverty – a term popularised in the 1990s – is traditionally characterised as a combination of low incomes, high energy bills and poor quality housing (Boardman, 1991). While official definitions do not (yet) exist, energy poverty is generally defined as the inability of households to attain sufficient energy services in the home (Bouzarovski, 2018; Faiella & Lavecchia, 2021). *Energy services* refer to space heating (or cooling), cooking, ICTs or the efficiency of domestic white goods (Petrova & Simcock, 2021). Poor energetic housing conditions due to a lack of insulation or poor maintenance are uncomfortable, but can also be detrimental to physical and/or mental well-being due to mould, damp or draught issues (Biermann, 2016; Thomson et al., 2017). Also, when combined with high energy prices it can lead to restricted energy consumption and problems with paying the (energy) bill (Charlier et al., 2019). Not meeting desired (or expected) energy services can be detrimental to the quality of someone's social network, decrease performance at work or school, and impact one's agency and self-esteem (Hards, 2013; Straver et al., 2020; Thomson et al., 2017).

Energy poverty is not a singular problem but is correlating with or exacerbated by other personal and structural factors (of vulnerability such as age, socio-economic position, health status, and migration-background) (Crenshaw, 1991; Grossmann & Kahlheber, 2017). Along these lines, (migrant) women are found to be more vulnerable to energy poverty (Feenstra & Clancy, 2020; Fodor,

2006).¹ Women are more likely to end up as single mothers with (young) kids, work fewer hours (for less pay), biophysically prefer higher indoor climates, live longer (with small pensions), and are less likely to be home-owners than men (Feenstra & Clancy, 2020; Feenstra & Özerol, 2021; Petrova & Simcock, 2021; Sunikka-Blank, 2020; Tjørring, 2016). Gender – defined as the structural system of ‘femininities’ and ‘masculinities’ influencing differentiated power and patterns of behaviour (Petrova & Simcock, 2021) – is not a cause of energy poverty, but a factor contributing to increased vulnerability (Listo, 2018). By focusing on ‘gender’ as a factor which intersects with other mutually coexisting personal factors, the systemic inequalities and differences in the lived experience of energy poverty can be explored (Cornelis, n.d.; Grossmann & Kahlheber, 2017; Robinson, 2019).²

Despite evidence of intersectional gender differences at national and European levels, energy poverty monitoring and policy has been accused of being ‘gender blind’ (Clancy et al., 2007, 2017; Creusen et al., 2023; Feenstra, 2021b; Feenstra & Clancy, 2019; MacGregor, 2016). Due to a lack of gender-disaggregated data and focus on households as a whole instead of *intra*-household differences, the dynamic gendered dimensions of domestic energy practices – e.g., the division of household chores, but also energy-saving strategies – are obscured (Clancy et al., 2017; Khalid & Razem, 2022; Mechlenborg & Gram-Hanssen, 2020; Robinson, 2019). Hence, the distinct experiences of women fail to be recognised and, thus, are not effectively addressed in energy poverty policy (Feenstra, 2021b; Lantigua Francisco, 2022).

While housing quality, tenure type and income are dimensions that are (quantitatively) explored using household-level census data in the Netherlands (e.g., Dalla Longa et al., 2021; Mulder, Batenburg, et al., 2023), the subjective experiences of individual households along other axes of social difference such as age, migrant background or gender are yet to be studied. Even though energy poverty is gaining traction as an issue of importance in the Netherlands,³ there is currently limited knowledge about the intersectional dimensions of energy poverty vulnerability and household practices (Feenstra et al., 2021; Koster & Mouissie, 2022; Mulder, Batenburg, et al., 2023). Furthermore, there are signs that the current energy poverty measures are not accessible to everyone in equal measure (Bokhorst et al., 2022). Herein, different capabilities between households,

¹ This is also referred to as the *feminization of poverty* (Fodor, 2006). During COVID-19, especially women and mothers were impacted economically, as found by the OECD (Frey & Alajääskö, 2021).

² ‘Lived experience’ studies look into the meanings, behaviours, actions, and coping strategies of households using qualitative methods (Ipsos MORI Scotland, 2020; Middlemiss et al., 2018).

³ In 2023, TNO published the first annual energy poverty monitoring study (Mulder, Batenburg, et al., 2023). Prior to a White Paper published in 2020, the Netherlands only addressed energy poverty as a sub-section of general poverty (Mulder, Dalla Longa, et al., 2023; Straver et al., 2020).

but also too-generalised and uniform policy responses and solutions tend to reinforce structural inequalities (Bokhorst et al., 2022; Koster & Mouissie, 2022).

To elucidate the importance of looking at the intersectional gender dimensions of energy poverty, this thesis takes place in Kanaleneiland, Utrecht – a combination of two burrows in the Southwest of Utrecht in the Netherlands (Kanaleneiland-Noord and -Zuid) – and studies how women living in energy poverty problematise their condition and how they act upon it. Using social practice theory as an epistemological basis (Bartels, 2018; Schatzki, 2001), domestic social practices, i.e., routinised sets of practices like ‘cooking’, are this thesis’ central unit of analysis. By means of a wide range of ethnography-inspired methods such as semi-structured interviews, field visits, and conversations with professionals and women in the neighbourhood the following research question will be addressed:

How is energy poverty understood and acted upon through gendered practices in Kanaleneiland, Utrecht?

Gender is understood as one – among other – vulnerabilities attached to specific roles and identities, but also as a ‘shared understanding’, i.e., a dimension suffusing practices (Khalid & Razem, 2022; Mechlenborg & Gram-Hanssen, 2020; Welch & Warde, 2016). A practice approach studies ‘what actually happens’ on the ground instead of more statistical or instrumentalist analyses. Hence, it is a practical lens through which to study the diversity of ‘lived experiences’. Theoretically, this thesis adds to energy poverty literature by nuancing the use of Shove et al.’s (2012) ‘social practice framework’ in the energy poverty field using specific practice examples (Hards, 2013; Shove & Walker, 2014).

While the ‘usual suspects’ are often reached in participation studies, people with a migration background – e.g., due to language and cultural barriers – are notoriously ‘hard-to-reach’ (Feenstra, 2021a; Tonkens & Verhoeven, 2019). Empirically, this study contributes to this research gap by focusing on a largely invisible group of energy end-users: women with a migrant background (Creusen et al., 2023). Through an analysis of their energy poverty-related domestic practices one-dimensional ideas about ‘the household’ are challenged and the diversity of energy poverty experiences is explored (Feenstra, 2023; Heredia et al., 2022; MacGregor, 2016). Herein, it takes on a new and highly localised focus – as recommended by the European *Energy Poverty Advisory Hub* (EPAH, 2022) and Robinson (2019) – into the dynamics between gendered practices and energy poverty in a specific neighbourhood in Utrecht.⁴

⁴ Previously, Mechlenborg and Gram-Hanssen (2020) have formulated a framework for studying gendered energy practices, while Tjørring (2016) and Petrova and Simcock (2021) have conducted case study analyses in Denmark and Poland, Czech and Slovakia.

Another aim of this study is to gain insight into the value of understanding energy poverty as a gendered issue to help close the gap between policy and experiences at the street-level. In light of Dutch ambitions to achieve a carbon-neutral energy system by 2050, a practice approach can also help uncover the (unintended) consequences of certain policies and analyse individual experiences and perceptions of energy poverty (policy) (Ministry of Economic Affairs and Climate, 2019; Shove et al., 2012; Wagenaar & Cook, 2003).

Kanaleneiland has a relatively high energy poverty prevalence (7.4% of all households, similar to the Dutch average), making it an interesting case study in an urban, and more importantly, local context (Mulder, Dalla Longa, et al., 2023; TNO, 2023). The neighbourhood has a low average income, high levels of 'social' regulated rent (70%), and has since 2006 been listed as a 'multi-problem' neighbourhood (AlleCijfers, 2023a; Gemeente Utrecht, 2022; Lörzing et al., 2008). As such, there is a very robust existing social network of organisations and institutions to tackle the *kansenongelijkheid* (opportunity inequality) in the area (NOS, 2020; Rianne Bakker, *pers. comm.*, 18 April 2023). Furthermore, over 80% of its population has a migration background, of which over half is of Turkish or Moroccan descent (AlleCijfers, 2023a, 2023b). The combination of low incomes, fewer chances, and a substantial migrant population makes Kanaleneiland particularly interesting for an intersectional study of gendered energy poverty.

2. Energy Poverty, Practices and Gender

Energy poverty emerges “when a household is unable to secure a level and quality of domestic energy services – space cooling and heating, cooking, appliances, information technology – sufficient for its social and material needs” (Bouzarovski, 2018, p. 1).⁵ Nonetheless, the literature on energy poverty and its drivers, effects, and policy responses is varied.

The following background section will delve deeper into the scientific background of energy poverty. Herein, intersectionality and gender are introduced as valuable – but understudied – theoretical perspectives. Next, social practice theory is described as the main approach used in this thesis, also specifying gendered domestic energy practices.

2.1. Energy Poverty

Brenda Boardman (1991) first put energy poverty (or ‘fuel poverty’ as it is still called in the United Kingdom and Ireland) on the European academic agenda in the 1980s. Famously, she described a ‘classic triad’ of factors that contribute to energy poverty: “low incomes, poorly insulated houses and high energy use resulting in high energy bills” (Boardman (1991) in Sialino, 2021, p. 23). In contrast to its use in Southern contexts as a lack of access to ‘modern’ energy services such as electricity (Pachauri & Rao, 2013; Petrova & Simcock, 2021), this framing defines energy poverty in terms of economic vulnerability rather than poverty (Faiella & Lavecchia, 2021). Yet, while income poverty can occur anywhere, energy poverty tends to be spatially concentrated in regions and neighbourhoods with low-quality and energy-inefficient housing (Bouzarovski & Tirado Herrero, 2017; Charlier et al., 2019; Dalla Longa et al., 2021). In the Global North, these neighbourhoods often contain a high percentage of (social) rental properties (Mulder, Batenburg, et al., 2023).⁶

Traditionally, energy poverty is studied in a positivist tradition, meaning that the extent and depth of the phenomenon are quantitatively measured (Longhurst & Hargreaves, 2019). Often this is done through a combination of low incomes and high bills (the so-called *energy quote* or ‘10% rule’) and poor energetic housing quality (often modelled according to freely available data) (Faiella & Lavecchia, 2021; Tirado Herrero, 2017).⁷ However, some note that simplistic metrics such as the

⁵ Definitions containing ‘minimum’ or ‘acceptable’ levels of energy services often refer to scientific studies or pre-defined standards like the WHO 18-21°C indoor temperature recommendations (Bouzarovski, 2018).

⁶ Rental properties are often of poorer quality and house households with low incomes who do not have the (financial) means or ability to participate in the energy transition by means of investment (Bal et al., 2021; Mulder, Dalla Longa, et al., 2023). However, some note that housing corporations can also be at the forefront of sustainable renovations as many are making large-scale sustainability investments (Charlier et al., 2019)

⁷ Subjective indicators are monitored using census-level data and surveys asking questions related to ‘feeling cold/hot at home’ and the ‘presence of mould or damp in the dwelling’ (Tirado Herrero, 2017; Waddams Price et al., 2012).

energy ratio can obscure instances of under-consumption, known as ‘hidden energy poverty’ (Meyer et al., 2018; Sareen et al., 2020).⁸ Additionally, they “carefully establish which households are worthy of support” and which ones are left out of the calculations and support schemes (Tirado Herrero, 2017, p. 1029). Moreover, static metrics do not tell us anything about the emotions, subjective experiences and meanings attached to living in energy poverty (EPAH, 2022).

Energy poverty is not just a material deprivation of energy services leading to a cold home or physical health problems from mould or damp formation, but it also has significant immaterial effects. These include mental health impacts (Bartiaux et al., 2021; Grossmann & Trubina, 2021; Longhurst & Hargreaves, 2019; van Maurik et al., 2023), social isolation (Bredvold & Inderberg, 2022; Middlemiss et al., 2019; Mulder et al., 2021), less or no access to leisure and culture (Bartiaux et al., 2021), poor (intra-household) relationships (Bartiaux et al., 2021; Heredia et al., 2022), and reduced school/work performance (Ellsworth-Krebs et al., 2019; Faiella & Lavecchia, 2021; Stojilovska et al., 2021). Since the home is constituted as a place of rest, (a sense of) ownership and comfort, not achieving desired or normalised energy services can be a disempowering, or even shameful, experience (Bartiaux et al., 2018; Ellsworth-Krebs et al., 2019; Grossmann & Trubina, 2021; Hards, 2013).

Even though income levels are a key predictor for energy poverty, some energy poverty scholars emphasise the importance of looking at the ‘systemic’ and “complex intersection of life circumstances, social circumstances, availability of infrastructure, and the political climate” (Bredvold & Inderberg, 2022; Grossmann & Kahlheber, 2017; Middlemiss et al., 2019, p. 227).

An Intersectional Perspective on Energy Poverty

Energy poverty is nearly always intensified by or can intensify other correlating issues related to poverty (Heeten, 2022; Middlemiss, 2022). This is also referred to through the concept of *intersectionality*.

Rooted in feminist and antiracist criticism, Kimberlé Crenshaw (1991) introduced the concept of intersectionality to emphasise the varying ways in which categories such as age, socio-economic status, ethnicity and ableness can intersect and reinforce each other (Heeten, 2022). People with multiple deprivileges are further marginalised and double-deprived, resulting in persisting inequalities. Therefore, instead of looking at singular issues like ‘poverty’, ‘age’ or ‘gender’, an

⁸ Alternatively, low incomes and unemployment often overlap with energy poverty but this is not necessarily the case. Low income households can, e.g., live in a well-insulated home with low energy costs, and middle income groups can also experience difficulties paying their energy bills (Grossmann & Kahlheber, 2017; Sovacool, 2015).

intersectional lens emphasises the combination of both contextual (or systemic) factors and socio-demographic characteristics can determine, or limit, individual actions and choices (Grossmann & Kahlheber, 2017; Middlemiss, 2022; Stojilovska et al., 2021). Herein, vulnerability is a fluid and changeable condition. “By changing some of their circumstances and vice versa” households can enter or exit energy poverty at any time (Bouzarovski, 2018, p. 19; Middlemiss & Gillard, 2015). Likewise, Crenshaw emphasises that “the effects of policies flow along the intersecting axes of inequalities”, meaning that households can have vastly different experiences and (side-)effects of policies than expected (Crenshaw (1991) in Grossmann & Kahlheber, 2017, p. 28).

An intersectional lens shows that next to unemployed and low-income groups, especially single parents, migrants, people with ill health or mobility issues, tenants, and the elderly are more vulnerable to energy poverty (Bosch et al., 2019; Brunner et al., 2012; Cambois et al., 2019; Middlemiss, 2022; Vieth, 2021). There are clear indications that women are also more vulnerable to energy poverty. In this thesis, gender is not a separate category or binary, but is a *type of deprivilege* that intersects with other forms of social difference (Crenshaw, 1991; Grossmann & Kahlheber, 2017; Khalid & Razem, 2022; Listo, 2018).

Energy Poverty and Gender

In energy poverty literature, the role of gender is understudied or misinterpreted – especially in traditionally egalitarian countries like the Netherlands (Feenstra, 2021b; Listo, 2018). However, also here, women are disproportionately affected by energy poverty (Feenstra, 2023). European labour union *Etuc* notes that nearly half of single mothers (44%) and a third of women living alone are predicted to have difficulties paying their energy bills between November 2022 and February 2023, as opposed to a quarter of single men (Eurofound, 2022). This increased likelihood of women ending up living in energy poverty is attributed to three main factors: economic, biological/biophysical, and socio-cultural (Clancy et al., 2017).

Economically speaking, women in Europe still experience a payment gap with men and are more likely to work part-time (Clancy et al., 2017; Feenstra & Clancy, 2019; Rubery, 2015; Sunikka-Blank, 2020).⁹ Furthermore, women are disproportionately found as heads of households either alone or as single-parent families, meaning they have larger expenses than households without children (Feenstra, 2023; Sunikka-Blank, 2020; Vieth, 2021).¹⁰ Once Dutch women become mothers, Rabaté and Rellstab note that women’s income decline by 46% while men’s income remains largely

⁹ Dutch women spend 4.5 hours of unpaid care work a day, are European champions of part-time work (75% of all women), and are still often paid 86.6% of male salaries (CBS, 2022a, 2022c; Creusen et al., 2023; Feenstra & Clancy, 2019; van der Vliet et al., 2022).

¹⁰ 72% of women with a low income is the main breadwinner without a partner (Creusen et al., 2023).

unaffected (2021). In old age, there is also a significant (and deepening) pension gap due to gendered labour and payment differences during their working time (Clancy et al., 2022; Feenstra, 2023; Feenstra & Clancy, 2020; Robinson, 2019). Lastly, women are less likely to be homeowners, meaning they have less agency over renovations and are unable to build up assets (Feenstra & Clancy, 2020).

Biophysically and biologically, young children and the elderly are more vulnerable to heat and cold stress, whereby women (who also tend to exhibit more health issues at an earlier age) often prefer higher temperatures and live longer than men (Day & Hitchings, 2011; Denhart, n.d.; Sunikka-Blank, 2020). By spending more time at home, especially in old age or as stay-at-home caregivers, women are more exposed to unhealthy indoor climates (Robinson, 2019). Furthermore, due to their responsibility as home-makers and care-givers, women are more likely to experience the “emotional impacts” of living in energy poverty (Petrova & Simcock, 2021).

Lastly, socio-cultural factors and norms play a large role in increasing women’s vulnerability to energy poverty in terms of gender roles and tasks. Energy poverty is found to be linked to the amount of time typically spend at home (unemployed, sick or retired) and/or having caring and domestic roles (Anderson et al., 2012; Petrova & Simcock, 2021; Robinson, 2019). Women tend to spend more time on unpaid housework and caring duties (also after a divorce) constituted by gendered expectations of appropriate ‘feminine’ or ‘masculine’ domestic practices (Fodor, 2006; Heredia et al., 2022; Mechlenborg & Gram-Hanssen, 2020; Petrova & Simcock, 2021; Sunikka-Blank, 2020). Studies show that women are highly aware of their domestic energy consumption, whereas larger technological renovations or investments are often undertaken by men (Clancy et al., 2017; Tjørring, 2016).

Traditional household-level data – which is generally not disaggregated by gender – can obscure the power and time use differences between individual household members (Ahlborg, 2017; Feenstra, 2021b; Heredia et al., 2022; Khalid & Razem, 2022).¹¹ Also in the Netherlands gender is not disaggregated in energy poverty monitoring to date (Feenstra, 2023; Mulder, Batenburg, et al., 2023).

Furthermore, using an intersectional lens, Creusen et al. (2023) and Middlemiss (2022) find that the combined effects of being a woman *and* other factors like low-incomes, low education achievements, and migration-background all culminate into increased energy poverty due to discrimination and limited capabilities.

¹¹ Dr. Mariëlle Feenstra, in a podcast published in 2021, explains that modern households and families are more dynamic than ever and represent a trend that diverges from the convention of the nuclear family with male-breadwinner. Children of divorced parents have two homes, moving between homes, and partners do not necessarily have to share a home (Cornelis, n.d.).

Qualitative research that takes an *intra*-household perspective is recommended to safeguard the individual experiences of women (Feenstra, 2021b). I argue that one effective approach for studying intersectional gender dimensions at the level of the individual in energy consumption literature is the practice approach.

2.2. A Practice Approach to Energy Poverty

During the ‘interpretative turn’ in contemporary social theory in the 1970s, *social practice theory* has become an influential perspective in a wide range of disciplines ranging from psychology, anthropology and philosophy to cultural theory, sociology and even science and technology studies (Reckwitz, 2002). In contrast to classical social and cultural theories which concentrate on structures, individuals, or textual discourse, the practice approach takes *practice* as the central unit of analysis (Reckwitz, 2002; Schatzki, 2001; Shove et al., 2012). Herein: “practices are the source and carrier of meaning, language, and normativity. The generation, maintenance, and transformation of these phenomena are achievements of extant practices that are realized in the public realm of actions and interactions that practices open up” (Schatzki, 2001, p. 21). While the material world construes and mediates practices, many practice theorists focus on humans as *carriers* who embody, enact and perform practices (Schatzki, 2001; Shove et al., 2012). Considering intersectionality, Shove et al. (2012) note that “not every human being is capable of undertaking every possible practice, nor are practices uniformly distributed” (p. 65).¹² The practice approach is widely used in energy consumption research through *energy practices* (Hards, 2013; Shove & Walker, 2014; Wilhite, 2016).

A practice is “a routinized type of behaviour” – often single or a combination of unique actions to produce a practice such as ‘cooking’, ‘cleaning’, or ‘shopping’ – which combines a set of three interconnected elements (Reckwitz, 2002, p. 250). Shove, Pantzar and Watson (2012) subdivide these into the “material” (physical equipment, technologies, infrastructure), the “meaning” (images, discourses, representations) and “competence” (skills, know-how, techniques) (see Figure 2).

¹² This is often linked to Bourdieu’s *types of capital* as personal assets (economic, social, symbolic, cultural) which can affect individual capacity to act (Power, 1999).

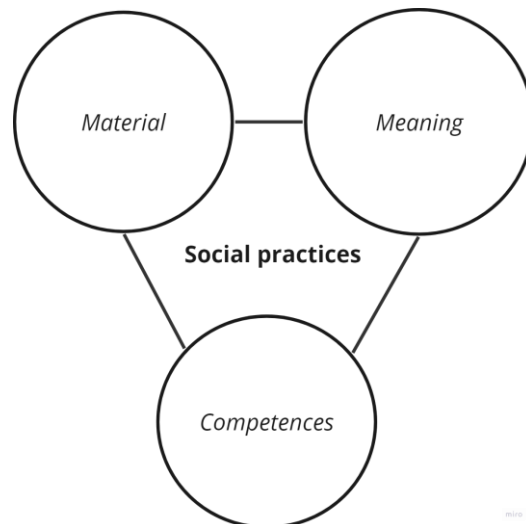


Figure 1. Social Practice Framework by Shove et al. (2012).

Material elements usually have a ‘closed’ script, “meaning that their role, and relation to other artefacts, is tightly defined” (Shove et al., 2012, p. 47). *Competence* is not bound to material reality and can be modified, adapted and contained in memories, depots and in between (or beyond) practical engagements (Shove et al., 2012). Lastly, *meaning* is strongly linked to association and classification which are “unavoidably relative, situated and emergent” (Shove et al., 2012, p. 53), but also ‘historically-culturally specific’ and ‘implicit’ (Reckwitz, 2002). Herein, ideas and societal discourses on ‘normal’ energy consumption (e.g., a recommended indoor temperature of 18-21°C or aesthetic and hygiene norms) can help determine what energy practices are ‘desired’ or ‘appropriate’ in particular settings (Shove, 2003; Shove & Walker, 2014; Wilhite, 2016).¹³ However, separately these elements are usually ‘dormant’, meaning “that relevant elements need to co-exist if practices are to extend or endure” (Shove et al., 2012, p. 57).

Despite not having a singular definition and encompassing a wide diversity of approaches by different scholars, practice approaches are usually used to (1) provide descriptive accounts of practices, and/or (2) study or understand the transformation of specific subject matter in a ‘field’ (Schatzki, 2001).¹⁴ This thesis, too, uses the practice approach to describe the practices that occur in relation to energy poverty in a specific social context. Additionally, it aims to give a more nuanced understanding of the interplay between these practices in the domestic sphere and their consequences for broader societal processes like the Dutch energy transition. Below, the gender-energy nexus is discussed using a practice lens.

¹³ Especially in ‘rich societies’, cultural norms of normalised energy services can be especially stringent and can lead to severe stigmatisation and feelings of unfulfillment among individuals who are unable to achieve them (Hards, 2013; Wilhite, 2016).

¹⁴ Practices occur in *fields*, popularized by Bourdieu. Field relevant to energy poverty can be the energy and/or housing market, but also domestic energy consumption (Bredvold & Inderberg, 2022).

Gendered Energy Practices

The domestic sphere is in this case a setting wherein practices are connected because of co-location (Shove et al., 2012). Since the home remains one of the most gendered spaces in the Global North, studying gender in domestic energy practices is particularly interesting (Khalid & Razem, 2022; Listo, 2018; Tjørring, 2016).

Energy practices refer to the practices that make use of energy's 'ability to do work' (Gram-Hanssen, 2008). Here, it is important to note that energy is not used for its own sake, "but is used as part of, and in the course of, accomplishing social practices" (Shove & Walker, 2014, p. 47). Not only do available technologies or material infrastructure (e.g., having a dishwasher) affect how individuals can perform a practice, but implicit knowledge about cooking or recipes also affects how (and where or what) someone 'cooks' (see Figure 2).

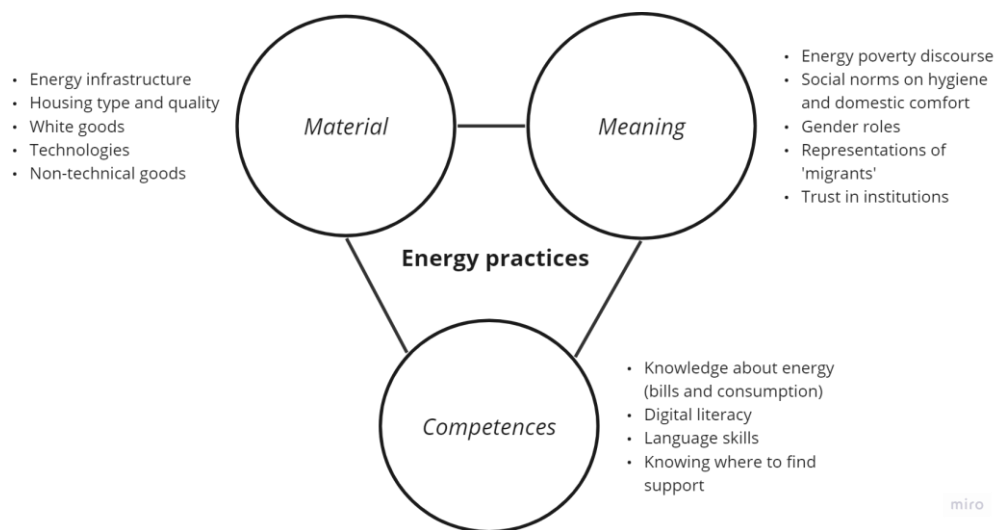


Figure 2. Overview of energy practices using the framework by Shove et al. (2012).

As energy practices are carried and performed by different bodies in specific socio-cultural contexts, certain practices are prescribed to certain fluid and dynamic gender (and cultural) identities and roles (Gram-Hanssen, 2008; Mechlenborg & Gram-Hanssen, 2020; Petrova & Simcock, 2021; Reckwitz, 2002). Herein, gender is something people *do* rather than have or are (West & Zimmerman, 1987). These roles are continuously (re)negotiated and performed (Butler (1991) in Tjørring, 2016).¹⁵ Therefore, gender can be understood as "one of those larger phenomena that thread through or suffuse practices" (Mechlenborg & Gram-Hanssen, 2020, p. 5). Along these lines, gender is an embodied part of one's *habitus* which reproduces particular social structures (Power, 1999). Herein, gender "influences the inner workings of single practices, the connections between practices, and the larger constellations involving a multiplicity of practices" (Mechlenborg & Gram-Hanssen, 2020, p. 5).

¹⁵ Roles can include 'mother' or 'wife' (Bradshaw, 2002).

Shove et al. (2012) define gender as an ‘element between practices’, while Schatzki calls gender a ‘shared understanding’ (Schatzki, 2001; Welch & Warde, 2016).

A feminist lens shows that “gender inequality does not signify women’s relative poverty, but rather is characterized by social norms in which femininity, and women, are subordinated and marginalised” (Listo, 2018, p. 14). By viewing gender as an element between practices, it allows for studying how the social, economic and political constructions of ‘femininity’ or ‘masculinity’ provide a dynamic point of connection between practices, which in turn, “shapes social relations in an unequal way” (Robinson, 2019, p. 222; Shove et al., 2012). Shove et al. (2012) visualise how shared understandings of gender can function using an example of practices related to driving and repairing a car (see Figure 3).

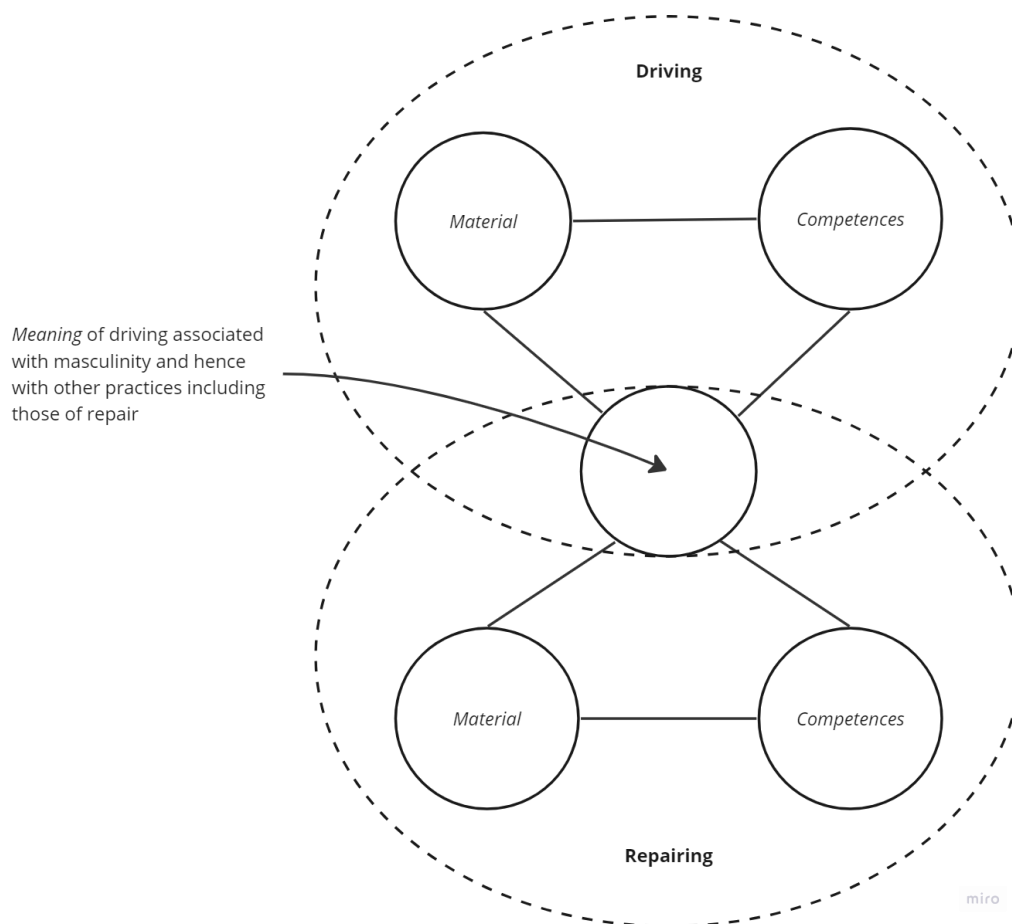


Figure 3. Elements between practices (Shove et al., 2012, p. 37).

Next to gender, membership in certain socio-cultural groups, related to how people see themselves and/or wish to be perceived by others, are found to be relevant dimensions affecting energy practices such as the choice of coping strategies (Day & Hitchings, 2011; Gattino et al., 2015; MacGregor,

2016).¹⁶ For example, migration background can influence the degree to which people successfully navigate energy poverty. Language barriers, cultural differences, and discrimination vis-à-vis municipality officials, housing corporations and/or local institutions are all added vulnerabilities which can determine what (coping) practices are available or preferred (Grossmann & Kahlheber, 2017; Lantigua Francisco, 2022; Stojilovska et al., 2021). Membership in certain cultural or religious groups can also influence gender roles and domestic household tasks. Van den Vijver (2007), studying five major migrant groups in the Netherlands,¹⁷ finds that especially first-generation migrant families can share more traditional beliefs about gendered domestic responsibilities and practices. Hence, migration background – or ‘culture’ – can also be viewed as an element between practices similar to, or intersecting with, gender.

¹⁶ For example, Grossmann and Kahlheber (2017) note that German household have a strong *lüften* habit (ventilation by opening windows). This is effective against mould and stale air, but also causes heat loss.

¹⁷ He looked at 1,104 Dutch mainstreamers, 249 Turkish-, 200 Moroccan-, 126 Surinamese-, and 94 Antillean–Dutch citizens.

3. Case Study: Energy Poverty in Kanaleneiland, Utrecht

This study is conducted in Kanaleneiland-Noord and -Zuid in the *Zuidwest* district of Utrecht. These two burrows are often taken together as Kanaleneiland (Figure 4). Kanaleneiland has a population of about 18.000 people (51.5% men, 48.45% women) (AlleCijfers, 2023b, 2023a).

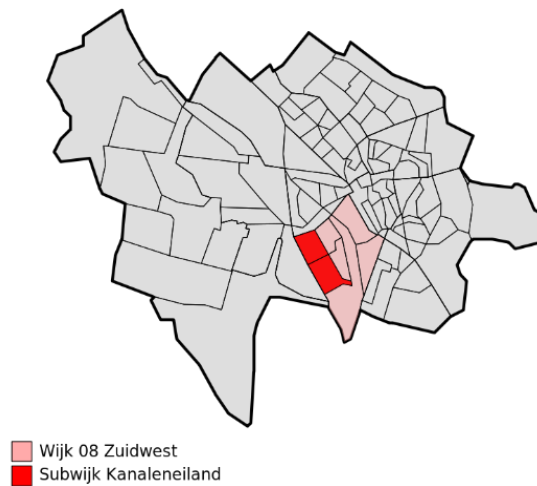


Figure 4. Map of Kanaleneiland in Southwest Utrecht (CBS/Kadaster, 2008).

Utrecht Zuidwest has very similar energy poverty statistics to the national average, but substantially higher than the city average (see Table 1). The area has a substantial migrant population (83% has a non-western background),¹⁸ 89% apartments as opposed to other types of buildings, a large number of social housing (nearly half), and relatively high levels of income poverty (AlleCijfers, 2023a, 2023b; CBS, 2022b).¹⁹ Especially in neighbourhoods with high levels of (social) regulated rent energy poverty is more prevalent as poor-quality housing and low incomes coincide (Bouzarovski et al., 2020; Bouzarovski & Tirado Herrero, 2017; Mulder, Batenburg, et al., 2023). Mulder, Batenburg et al. (2023) find that among the Dutch energy-poor households, 66.9% live in a social corporation apartment.

Table 1. Comparison of energy-poor households (%) on a national, city, and district level (CBS and TNO data).

	Energy-poor households			Energy-poor households with 15% poorest quality housing		
	LIHE/LILEK (%) – 2020	LIHE/LILEK (%) – 2022	LIHE/LILEK – Difference 2020-2022	LIHE/LIZLEK (%) – 2020	LIHE/LIZLEK (%) – 2022	LIHE/LIZLEK – Difference 2020-2022
Netherlands	6.4	7.4	1.0	3.4	5.1	1.7
Utrecht	4.8	5.7	0.9	2.2	3.7	1.5
Zuidwest	6.3	7.7	1.4	2.7	4.9	2.2

¹⁸ Half of the non-western migrants in Kanaleneiland are of Turkish descent (49%) and a fifth is Moroccan (22%) (CBS, 2022b).

¹⁹ The average income of Kanaleneiland-Noord is € 20,600 and € 23,500 in Kanaleneiland-Zuid (AlleCijfers, 2023a, 2023b). The legal social minimum (*bijstandsuitkering*) is set at € 1,934.45 a month for couples and € 1,378.95 for single households (UWV, 2023).

Considering the classic energy poverty indicators (see Boardman, 1991), Kanaleneiland is particularly interesting because housing with poor energetic quality *and* low incomes (average annual income of € 20.600-23.500) are both prolific in the area.²⁰ Herein, Kanaleneiland-Zuid has a higher share of poor-quality housing (labels F and G cover 11.5% of all houses, shortly followed by 23.4% with energy label E) (AlleCijfers, 2023b). Housing corporations in Kanaleneiland-Noord have fared better with large-scale renovations in the past decade. Here, energy label A is most prevalent and energy labels F and G only cover 1.9% of all houses (AlleCijfers, 2023a).

Due to the highly decentralised structure of the Dutch government, municipalities are relatively free in the implementation of national policies. Therefore, there can be substantial differences between municipalities (Feenstra et al., 2021). Appendix 1 summarises the Dutch case study, including a list of Dutch and municipal measures.

In Utrecht, energy poverty is addressed through the implementation of national measures like the *energietoeslag* (two one-time bonuses for low-income households) and facilitating the application procedure for the *Tijdelijk Noodfonds Energie* (temporary fund). Next to this, the municipality of Utrecht has a broad social welfare program including the *U-pas* for low-income citizens (includes discounts and a monthly budget for public transport, sport and culture), a remission on certain municipal taxes, and some renovations (see Appendix 1). The municipality also subsidises several projects which work to support vulnerable households in Utrecht. These include *De Geldzaak* (financial support organization with an open door policy); *U Centraal* (provides workshops and information on (financial) independence and life events); *Energiebox* (an initiative which provides a free energy-saving kit for tenants and working with volunteer energy coaches); and social welfare organisations such as *Buurtteam* (social work). Independently of the municipality, organisations like *Stichting Al Amal* and *Papiercafé* operate to offer culture-sensitive support in the neighbourhood through meet-ups, individual support, and translation work. Every first Tuesday morning of the month since 8 March 2022, nine local organisations meet up in the local community centre in Kanaleneiland-Noord to collaboratively help people with energy-related questions.

²⁰ In 2007 national policy, Kanaleneiland was mentioned as one of the 40 *Vogelaarwijken*. These 'multi-problem neighbourhoods were selected to combat and prevent further poverty, petty crime, and improve quality of living (Lörzing et al., 2008). See Verloo (2017) for a study of Zuilen, another neighbourhood in Utrecht with the same status.

4. Methodology

This study uses ethnographical methods, inspired by Lucie Middlemiss' 'lived experience' research, to study the diversity of social practices undertaken by women at a household level in the energy poverty field. Lived experience research and uses ethnographic methods such as fieldwork, participant observation, and interviews to gain a real-life and human-centred perspective on the meanings, responses and reasoning linked to energy poverty in a local context (Middlemiss et al., 2018, 2020). Moreover, qualitative analyses can go beyond (direct) material impacts such as financial struggles and/or debt accumulation; feelings of cold and not achieving (desired) energy services; and, physical health impacts (Grossmann & Trubina, 2021; Middlemiss, 2022). Therefore, practice theory is chosen as the epistemological foundation whereby *gendered practices* enacted by women are this thesis' central unit of analysis. Here, 'gender' is seen as an important (vulnerability) factor intersecting with others, e.g. migration-background or health, threading between energy poverty practices (Mechlenborg & Gram-Hanssen, 2020; Schatzki, 2001).

The practice approach can be used to, firstly, describe the practices – in this case, related to the field of energy poverty – and, secondly, analyse the meanings attributed to energy poverty through this transformative discursive interplay (Schatzki, 2001). These also correspond to the research questions guiding the analysis:

How is energy poverty understood and acted upon through gendered practices in Kanaleneiland, Utrecht?

- 1) What gendered energy practices exemplify the relationship between gender and energy poverty?
- 2) What does this tell us about how energy poverty is understood and tackled in the context of the Dutch energy transition?

While the first sub-question uses Shove et al.'s (2012) social practice framework (material, meaning, competence dimensions)²¹ and is informed by literature on gendered practices and energy poverty, the second sub-question will more broadly discuss the meanings attributed to energy poverty, its (unintended) policy consequences, and intersectional inclusion themes in the Dutch energy system.

4.1. Data Collection and Sampling

For this study, I participated in multiple meetings (with local organisations, but also the so-called *Milieugesprekken*) and three workshops by *U Centraal* (a welfare organisation founded by the

²¹ See Chapter 2.2. and Figure 1 (p. 15) for a more extensive explanation and operationalisation of Shove et al.'s (2012) framework.

municipality) between December 2022-May 2023. I also helped out Özlem – a local volunteer and citizen of Kanaleneiland of Turkish descent – during four informal ‘energy lessons’ at community centres, a local primary school, and *Stichting Al Amal* between January-May 2023 (see Appendix 6). During these sessions I participated in answering questions, helping out with information provision (on energy poverty, energy-saving strategies, and energy poverty measures), and took fieldnotes on what occurred, who was present, and what was discussed. Furthermore, anecdotal evidence was collected in informal conversations.²² Due to the longer duration of the fieldwork, a wider diversity of perspectives on the energy crisis and national measures can be observed, while also noting the climatic conditions that differ between mid-winter and the warmer months towards the end of my research (Middlemiss et al., 2020). While this temporal aspect is not necessarily the focus of my research, it is relevant in terms of energy consumption (colder days require more energy). Furthermore, the availability and awareness of measures also shifted during the fieldwork period (Elianne de Jong, *pers. comm.*, 26 April 2023). Additionally, the different locations, e.g., a primary school or a community centre, also lead to a larger potential sample.

Between February-April 2023, four semi-structured interviews (15-25 minutes) were conducted with women living in the neighbourhood and five interviews (15-45 minutes) with ‘street-level bureaucrats’ (Lipsky, 2010).²³ The length and depth of each interview varied because of language difficulties, noisy surroundings, and in one case time constraints. An overview of interviews is listed in Table 2 (p. 23). In informal conversations and participation in group discussions on the topic of energy poverty, anecdotes and personal stories provided further data for my analysis (Bernard, 2011).²⁴

²² If people seemed curious I handed out my personal contact details to the people I talked with, e.g., at the *Voedselbank* (food distribution centre), so they could contact me with any energy-related questions or I referred them to appropriate organisations in the city (see Appendix 3).

²³ Street-level bureaucrats refer to the individuals working at a local street-level implementing policy and discreetly navigating between normative anxiety to adhere to the rules and also most effectively achieve results (Lipsky, 2010).

²⁴ These included: volunteers at the *Voedselbank*, volunteers at the various organisations and community centers, participants in workshops and energy lessons, and professionals I met during meet-ups and information sessions.

Table 2. Overview of interviews with professionals (Px) and women (Wx).

Code	Name	Identifications	Date
P1	Marnix van der Waals	Employee at <i>U Centraal</i> , department of Life Events	14-12-2022
P2	Elianne de Jong	Employee at <i>De Geldzaak</i>	12-1-2023
P3	Rianne Bakker	Coordinator IRIS Kanaleneiland, Employee Energie U	18-4-2023
P4	Özlem Özbekler	Social worker at <i>Buurtteam Kanaleneiland</i>	19-4-2023
P5	Hayat el Mofalli	Social worker and back office worker at <i>Stichting Al Amal</i>	8-5-2023
W1	Noura*	Social housing; 40-45; married with no children; welfare recipients (<i>bijstand</i>); Moroccan-descent	10-2-2023
W2	Maria*	Social housing; 35-45; married with three children (one adult, 2 teenagers); welfare recipients (<i>bijstand</i>); Moroccan descent	10-2-2023
W3	Sandra*	Social (elderly) housing; 65-75; retired and living alone; receives pension; Suriname-descent	7-3-2023
W4	Houda	Social housing; 30-35; single mother with two children (teenagers); welfare recipient (<i>WIA-uitkering</i>); Moroccan descent	10-2-2023

* anonymised at the request of the participant.

Street-level bureaucrats were found using official (online) channels, LinkedIn, and a snowball method. The latter included mail contact and referrals from other professionals active in the neighbourhood. Women living in energy poverty proved to be difficult to contact but were included in the research if they: 1) lived in Kanaleneiland, 2) expressed experiencing (some aspects of) energy poverty and/or high energy bills in the past months. Women were reached during scheduled (in)formal sessions about (energy) poverty, energy lessons, and a Moroccan women's group. Purposive sampling methods, instead of methods like flyers or random selection,²⁵ are generally recommended for hard-to-reach populations as participants are often not eager to discuss their experiences with researchers by themselves (Bernard, 2011).

For professionals, the interview guide was adapted multiple times throughout the research to reflect the specific organisation (see Appendix 2: Interview Guide (Professionals)). They were aimed at gaining an insight into the respective organization and its workings in dealing with (gendered) energy poverty in the neighbourhood. For the interviews with women, a validated interview guide developed by TNO and LSV was used (see Appendix 2: Interview Guide (Citizens)). The interviews with the three Moroccan women took place during the slotted women's groups at the local *buurthuis* (community centre) in Kanaleneiland-Noord. The interviews with the other participant took place after a session in the community centre. It is important to note here that 'gender' was not explicitly

²⁵ Flyers were printed and distributed in two Whatsapp groups (300 and 50 participants), and were handed out during energy lessons (see Appendix 4). However, they did not lead to any interviews.

asked about in many of the interviews. Instead, it often arose “organically” and implicitly, similar to the approach used by Petrova and Simcock (2021).

Upon agreement to do an interview, consent forms were signed disclosing full anonymity, a request to record the conversation, and the option to opt out of the interview at any time (Appendix 3). In instances where language and/or reading was a barrier, I read out the consent form and gave additional information in simple language. Most interviews with local women were not recorded at the request of the participant, meaning that note-taking and memorisation were essential to ensure all information was collected properly. The latter can affect the quality of direct quotes and depends strongly on memorisation, but can enhance rapport by making a conversation feel more natural (Bernard, 2011).²⁶

4.2. Data Analysis

The interview and fieldwork data were collected through notetaking (both during and after sessions). If interviews were recorded, a semi-verbatim transcription was transcribed. Transcripts of meetings, both semi-verbatim and descriptive, were coded in *Nvivo*. Coding was done using a combination of induction and deduction employing a thematic analysis (Braun & Clarke, 2006). Herein, codes were partially informed by practice theory, but also inductively coded inspired by intersectional categories and background literature on local governance. A full list of codes can be found in Appendix 5.

Themes were formed according to these codes and are grouped following the two sub-questions on, firstly, the description of gendered energy practices according to Shove et al. (2012) framework (see Chapter 2.2., Figure 1 (p. 15) and Figure 2 (p. 16)). Secondly, the discussion delves deeper into the implications of this gendered division of energy practices for public energy poverty policy and the Dutch energy transition as a whole. The latter links back to social practice theory’s purpose of analysing societal transformations (Schatzki, 2001; Shove et al., 2012). The output of this thesis will include a list of recommendations for policy-makers and (local) organisations in and outside of Utrecht. A Dutch summary will be shared with participants and interested organisations at the end of my thesis process.

4.3. Ethical Considerations and Positionality

As (energy) poverty is a decidedly personal and possibly sensitive topic (Grossmann et al., 2021), this study also makes use of aspects of participatory action research (PAR) to increase integrity and trust vis-à-vis participants and professionals.²⁷ PAR, originally used in healthcare and social work studies,

²⁶ Especially for conversations about private topics, trust and ‘being present’ is recommended (Bernard, 2011).

²⁷ Some professionals, especially, were skeptical of my involvement and interest in energy poverty. A few warned me against undertaking this research if I did not participate actively to “actually help out people”.

refers to the combined investigation and solving of an issue during a research practice (Greenwood & Levin, 2006). Through participation in meetings and energy lessons, I ended up co-hosting energy lessons with Özlem (a similar combined role of researcher and activist/practitioner is experienced by Alakavuklar, 2020).

While my initial plan was to focus on interviews and focus groups only, the format of an energy lesson and information distribution had two distinct outcomes for my research. First, by actively sharing my knowledge I ensured that I helped participants and interlocutors in return for their 'data'. My presence was viewed as positive and "reassuring", according to both Özlem and Rianne Bakker (*pers. comm.*, 18 April 2023). Second, my focus on giving an adequate lesson and being in a leading role allowed me to observe and hear a wider diversity of perspectives than I previously thought as women had conversations about their energy consumption and came with unique insights into their personal energy use at home. Since the lessons were women-only, which was an important benefit of these lessons for many Muslim women (*Milieugesprekken meeting*, 21 December 2022), insights can be more honest and open (Valentine, 1999).

To ensure the ethical collection of data, every participant I interviewed signed a consent form (Appendix 3). Furthermore, wishes for anonymity and wariness of photography and/or recording were respected throughout the research process. By taking a very personable approach and through many group discussions during energy lessons and meet-ups, anonymity could be maintained without losing out on valuable subjective stories related to the energy consumption of women living in the neighbourhood.

Language and cultural differences were a potential risk in this study as my position as a white, higher educated, Dutch woman is quite different from the backgrounds of the women I interacted with during the research period. I do not speak or understand Arabic and Berber, which made translation necessary in many instances, but also lead to high chances of translation errors and missed nuance (Bernard, 2011). As language could impact how my role is perceived in the field, as well as failure to communicate the goals of my presence at meetings and workshops, I always made sure to have myself introduced by someone there and was always transparent in my identity as a student.

5. Findings: Gendered Practices in Kanaleneiland

According to professionals, energy poverty is an issue that is well-recognised and experienced in Kanaleneiland (Milieugesprekken, *pers. comm.*, 10 January 2023). Also through conversations and interviews in the winter and early spring of 2023, women expressed their concern over the combination of high (energy) bills and their low incomes (e.g., women's hours, *pers. comm.*, February 2023).

Özlem Özbekler (Buurtteam) and Elianne de Jong (De Geldzaak) explain that, in Kanaleneiland, income poverty is a widespread issue (*pers. comm.*, 18 April 2023; *pers. comm.*, 12 January 2023). Also, high energy bills tend to range between € 130 to € 500-600 for larger households (Workshop 'Omgaan met geld', *pers. comm.*, 30 March 2023). This combination, often calculated as a household's energy quote, is combined with an assessment of the energetic quality of the home in Dutch monitoring reports (Mulder, Batenburg, et al., 2023).

Nearly all women who reported having very high energy bills live in social housing apartments which are not (yet) renovated (women's hours, *pers. comm.*, February 2023). Houda, a Moroccan woman living in a social housing apartment with her two children, explained that after renovations she could lower her thermostat significantly. "Previously I always had to put it on 19°C, but now 17°C is enough and I don't feel wind anymore" (*pers. comm.*, 10 February 2023). Being highly dependent on housing corporations for maintenance, many tenants are not free to undertake major renovations themselves (Mulder, Batenburg, et al., 2023). Another single woman whom I met during my information session at the *Voedselbank* reported having large debts, but since she lived in a newly renovated apartment her energy consumption was very low (Voedselbank visit, *pers. comm.*, 22 February 2023). Even though measures and policies are usually aimed at reducing costs through financial measures and allowances, scholars also find that preventing energy poverty by tackling ineffective energy-use is more effective (Charlier et al., 2019; Mulder et al., 2021).

During my fieldwork and sessions I was surprised by the large amounts of time women spent at home and their experience interacting with domestic (energy) technologies, white goods, and other related practices involving energy at home (Clancy et al., 2017; Feenstra, 2021b; Petrova & Simcock, 2021). Below, this gendered reality is exemplified through three examples using the framework by Shove et al. (2012) to structure my findings.

5.1. Economic Practices: Paying (Energy) Bills

A central component of the energy lessons Özlem and I gave in Kanaleneiland consisted of a section about (understanding) the energy bill. Elianne de Jong from De Geldzaak explained that during the

first months of the energy crisis in late 2022, many clients came in with their (high) bills and were confused (*pers. comm.*, 12 January 2023). News about the high prices had not yet reached them and she had to explain the basics of the energy bill to many people. Prior to the energy crisis, Dutch energy prices were low and relatively stable, making people less interested in understanding their energy contract and/or consumption. Similar stories were told by Marnix van der Waals from U Centraal and Hayat et Mofalli from Stichting Al Amal (*pers. comm.*, 14 December 2022; *pers. comm.*, 8 May 2023).

The energy bill consists of many different aspects, ranging from fixed municipal and net management taxes to the flexible amounts spent on electricity, natural gas and/or district heating. Together they are calculated in relation to one's monthly consumption. During our energy lessons, we explained that it is not possible to save on municipal and net management taxes (even though they have been lowered temporarily as per the general set of measures by the national government, see Appendix 1), saving on actual energy consumption is the most effective way to save costs. Additionally, we recommended comparing contract offers between energy companies to see if it is 'worth it' to switch providers.²⁸ The monthly amount someone pays can vary depending on that month's consumption, but also on the *termijnbedrag* (periodic rate) someone applies. Many energy companies recommend a periodic rate which is a bit higher than 'normal' and is aligned with current (high) energy prices to avoid having to compensate with a high *eindafrekening* (final payment) at the end of the year (Elianne de Jong, *pers. comm.*, 12 January 2023). While many households follow the energy companies' advice, people are free to set their own rates. Energy consumption can be tracked using 'smart meters' or via mobile applications, but many households receive their energy bills as a letter each month. Herein, having know-how about your average consumption patterns is important for predicting how much money to save each month, but being aware of the fluctuating prices is also crucial. While many people are aware that it is not wise to disregard the advice of their energy company, one Moroccan mother explained they consciously kept their monthly rate low so they could afford other essential expenses such as rent, clothing for their children, or even groceries (energy lesson, *pers. comm.*, 9 March 2023).

The practice of (being responsible for) 'paying (energy) bills' is an interesting set of practices which addresses the gendered divisions at home in terms of economic and socio-cultural roles (Clancy et al., 2017). To manage and pay for energy, it is essential to understand the energy bill,

²⁸ Here, cultural representations of 'things Moroccan people do' and 'things Dutch people do' returned. One woman joked during a meeting on the energy lessons that "only *Hollanders* switch energy contracts!" (workshop for volunteers giving the energy lesson, 10 January 2023).

linking immediately to *competence*, but also the *material* reality of consuming (different types of) energy (Shove et al., 2012).

During my fieldwork, I met many Moroccan women with a partner who were dependent on a *bijstandsuitkering* (general welfare), a *WIA-uitkering* (allowance in case of long-term sickness) or relied on their husbands' income. Single mothers, however, are singlehandedly responsible for their household income (Creusen et al., 2023). While some were working, many worked part-time because they were afraid to miss out on their welfare allowances or needed to be at home to take care of their children. Still, they all reported being highly aware of their monthly expenses, including energy. Houda, a single mother of Moroccan descent with two children, explained during one slotted women's hour at the local community centre that she sometimes worries about the other (married) women there:

I alone am responsible for my energy bills, but some women here don't know anything [about energy prices and consumption]. (...) I heard that some women leave all their electrical appliances 'on' all the time. Because I am alone I have more insight into my energy bills because I take care of all the finances at home. It worries me that some of these women don't know about these things. (Houda, pers. comm., 10 February 2023)

Returning to Shove's et al. (2012) social practice framework (Figure 5), *competence* returns to knowledge about energy bills and energy contracts, but also financial responsibilities which link to experience and one's ability to predict future expenses or consumption. Similarly, a lack of knowledge of household finances can also lead to reinforced gender roles at home – as experience and skills are predictors of who is responsible for the bills at home (Özlem Özbekler, *pers. comm.*, 8 May 2023). Language skills and digital literacy are factors which affect how households deal with their energy bills and were obstacles for women I met to varying degrees (also in EPAH, 2022; Grossmann & Kahlheber, 2017; Puts et al., 2022).²⁹ Organisations such as Stichting Al Amal and Papiercafé offer places to translate letters and/or help out with calls to energy companies. Knowing how to find these organisations is also part of *competence* and can be dependent on language and the quality of one's social network, but is also related to trust and norms about economic independence (Grossmann et al., 2021; Middlemiss et al., 2019). Herein, Rianne Bakker from Energie U notes that the role of culture is overlooked in the Netherlands (*pers. comm.*, 18 April 2023). Many people with a migrant

²⁹ Elianne de Jong from De Geldzaak notes that especially older (migrant) people have trouble with online application forms and Digi-D (*pers. comm.*, 12 January 2023). Professionals also explain that since many websites use complex language, people with language problems are more likely to give up (Marnix van der Waals, *pers. comm.*, 14 December 2022). Citizens I talked to during meetings admitted sometimes they also avoided the 'hassle' altogether, thereby missing out on governmental support (Bijeenkomst Energie, *pers. comm.* 8 March 2023).

background are wary of formal institutions like the municipality and prefer seeking help in their own networks.³⁰

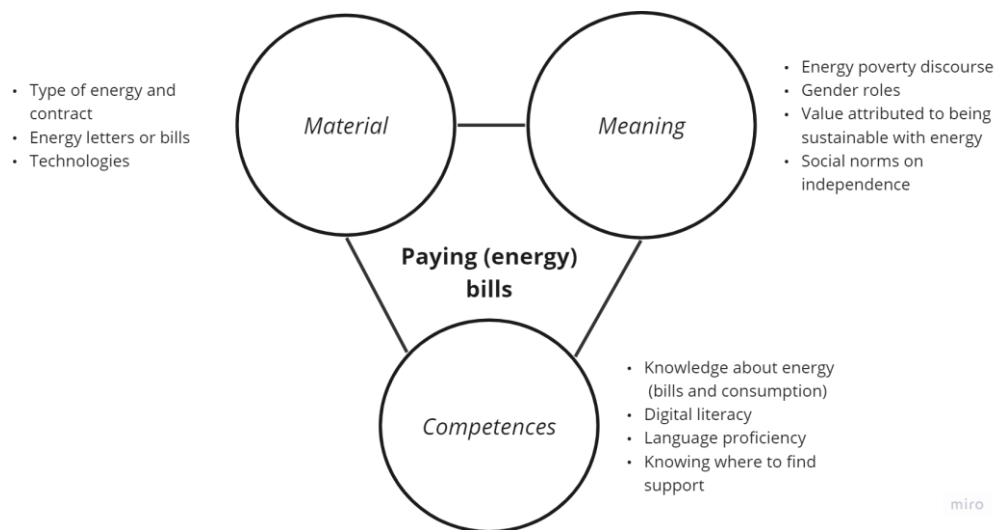


Figure 5. The practice of 'paying (energy) bills' (Shove et al., 2012).

Considering *meaning*, the meaning of energy poverty shifted during the period of fieldwork. As Elianne de Jong describes, people’s experiences shifted dramatically during the start of the ‘energy crisis’ as media attention and public discourse on energy started to take shape (*meaning*) (*pers. comm.*, 12 January 2023). Herein, also Buurtteam and Stichting Al Amal noticed an increase in clients who were scared of their energy bills (*pers. comm.*, 19 April 2023; *pers. comm.*, 8 May 2023). At the end of my fieldwork period, one woman told the group that she was happy with the warmer weather and was less worried about her energy bills (energy lesson, *pers. comm.*, 25 May 2023). However, some women did express their worry about excessive heat in their apartments during the summer, referring to last year’s heat wave.³¹

When noting gender roles and identities, gendered meanings are attached to traditionally ‘masculine’ provider roles, e.g. taking care of the household finances, and traditionally ‘feminine’ caregiver roles such as taking care of cooking, cleaning and children. Herein, Shove et al. (2012) framework can help visualise how the meanings of ‘masculine’ roles are associated with other typically masculine practices (Figure 6).

³⁰ Hayat el Mofalli from Al Amal notes that their organisation is very popular among people with a migrant background because they are based on trust. Al Amal “was actually founded from the need of some people who do not go to regular organisations that quickly. Um, often because of a language barrier, a culture barrier, or sometimes because they fear being open (...) with an organisation like Buurtteam. (...) We can offer support in their own language, (...) also for new migrant groups [like Syrians] for whom it is difficult to receive help from white institutions” (*pers. comm.*, 8 May 2023).

³¹ Cooling issues will most likely be an increasing topic in the upcoming decades due to rising temperatures as a consequence of climate change (Faiella & Lavecchia, 2021).

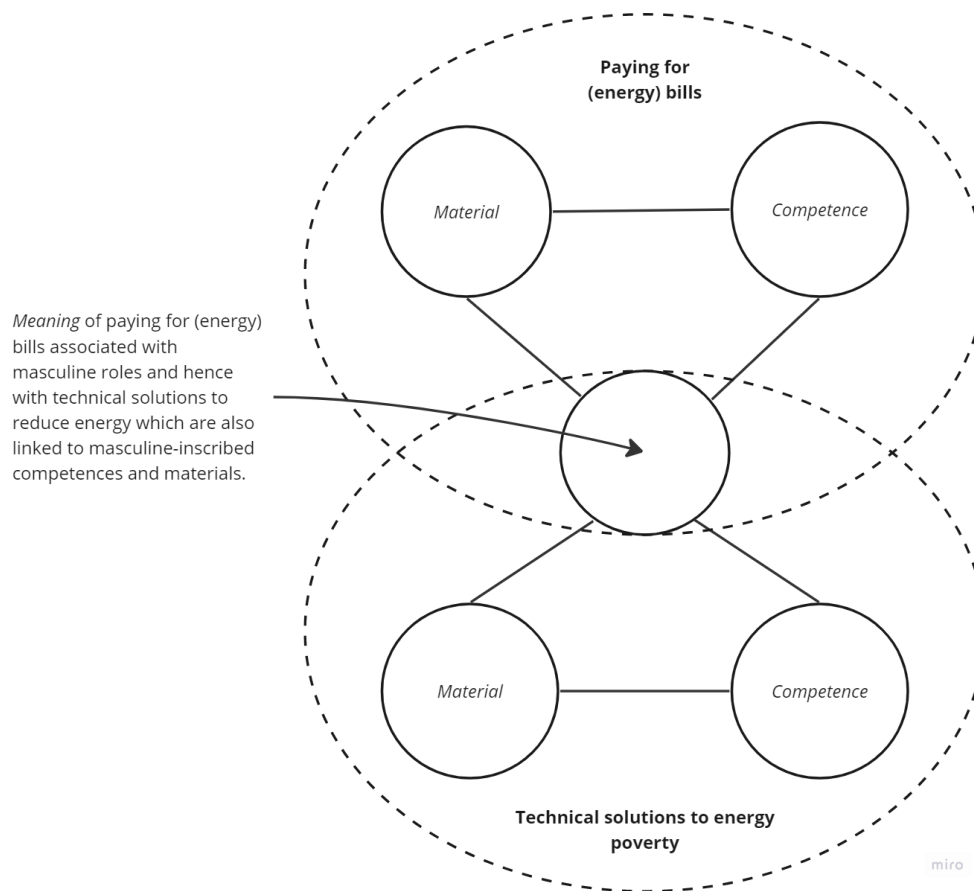


Figure 6. Associative practices related to 'masculinity' (Shove et al., 2012).

Technical solutions include applications for financial schemes or, practically, insulating walls or replacing single-glazed windows (Marnix van der Waals, *pers. comm.*, 14 December 2023; Tjørring, 2016). Explicitly, these typical gender divisions came back in the evaluations of the energy lessons in March 2023 (*Evaluatie Milieugesprekken*, 16 March 2023). Abdel, one of the volunteers, explained that the section about low-tech tips to save energy was not received well by the (Turkish and Moroccan) men he taught. These were called “women’s stuff” by many men present. However, he reported that these men were very interested in the financial measures they could apply for and wanted to know more about solar panels and insulation renovations. The energy lessons given and participated in by women, however, were graded higher as women could recognise the tips given to them and, if new and well-liked, immediately include them in their daily routines (*Evaluatie Milieugesprekken*, 16 March 2023). As certain *material* objects like tools are historically linked to male-dominated jobs and tasks, the actual use of them is also “symbolically inscribed” for men, while female-dominated spheres are more linked to femininity (Kline and Pinch (1996, p. 779) in Shove et al., 2012).

5.2. Caring Practices: Laundry

'Doing laundry' is a domestic practice conducted by all women I spoke to during interviewing and workshops. Women remarked on their use of the washing machine as a task which they were responsible for in their households. "I always do the laundry at home," one Moroccan woman laughed, "my husband doesn't know how to" (women's hour, *pers. comm.*, 10 February 2023). This matter-of-fact assumption that doing laundry is a female task was unquestioned during many lessons, which makes this practice interesting to study from an intersectional gender perspective.

The woman leading the energy lesson at Stichting Al Amal explained that in many Muslim households, gender roles can be more traditional, making laundry more strictly feminine (cultural values affecting the *meaning* of doing laundry) (energy lesson, *pers. comm.*, 25 May 2023). One explicit instance wherein the rigidity of these roles was visible was during an interaction with Noura*, a Moroccan woman during the Moroccan women's hour in the community centre (*pers. comm.*, 10 February). She had mobility and health issues, making it difficult for her to carry out domestic tasks such as vacuuming or cleaning. As both her husband and she were dependent on welfare allowances, her husband took care of the house. Noura explained that she did not like it that way, but that she had no other choice because she is too young to get *thuiszorg* (domestic health-related support) (*pers. comm.*, 10 February 2023). This 'failure' to live up to legitimised or expected gender roles can reconfigure gender dynamics at home, but can also have negative impacts on feelings of shame or disempowerment (Petrova & Simcock, 2021). Culturally-defined representations and cultural norms on domestic responsibilities can be more traditional in Muslim social groups according to the volunteer leading the woman's group at Stichting Al Amal (also found in van de Vijver, 2007).³²

Doing laundry is linked to social norms and preferences for 'clean clothing' and habits like throwing a t-shirt in the laundry basket after wearing it for one day. During one energy lesson, this was a point of discussion (*pers. comm.*, 9 May 2023). Women discussed whether they wore clothing for more than one day or not. Some women explained that they, on purpose to have smaller laundry loads, wore certain clothing pieces for multiple days as it was not 'dirty' yet. Here, again, mothers with (young) children were the first to remark that with children who do sports or play outside, this is practically impossible (*Milieugesprekken meeting*, 21 December 2022). Hence, social norms on personal hygiene also play a role in this decision. Additionally, it shows that 'doing laundry' itself is also, again, part of a wider combination of linked practices associated with wearing clothes,

³² After interviewing a Moroccan woman during the women's hour at the buurthuis in February 2023, I ended up not being able to use the interview because her husband had not approved her signing the consent form. She explained that all letters go to her husband first.

exercising, or taking care of children (Shove et al., 2012). Figure 7 illustrates the practice of doing laundry using Shove et al.'s (2012) framework.

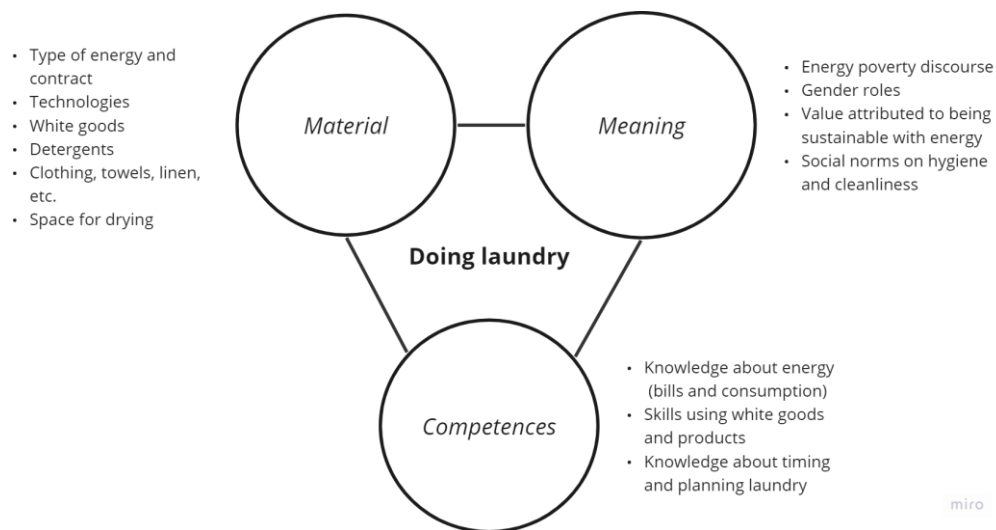


Figure 7. The practice of doing laundry (Shove et al., 2012).

Considering *material* elements, women explained they had possession over a washing machine, but usually not a drier. “Driers? No, that is too expensive and I have no space!” (Maria, *pers. comm.*, 10 February 2023). Doing laundry includes the *materiality* of a laundry machine (including its type, age, size, and energy efficiency) and detergent (which brand, what type), but also the materials that require washing (clothes, towels, bed linen), the type of energy contract and related infrastructure (fixed price, varying rate, energy source). This is affected by the household composition, for example, having children or a partner, but also the daily activities of these household members. One woman remarked on this topic: “I have teenage kids who do sports. It is impossible to skip laundry for one day!” (energy lesson, *pers. comm.*, 9 March 2023). Drying practices can be considered as a part of the multiple practices making up ‘doing laundry’ (Shove et al., 2012). The presence of a dryer, an outside area like a balcony, or a separate room to leave clothing out to dry are all part of the material reality affecting laundry practices.³³

During the energy lessons, the women I talked to were all aware of the energy-saving tips Özlem and I shared. These included awareness of the temperature of the wash. Many women already used the 30°C setting as their ‘standard’, but also remarked that they “had to” use a higher temperature for certain types of laundry. These include sports clothing, towels, or underwear. For these types of laundry, they make an exception and use higher temperatures (energy lesson, *pers. comm.*, 9 March 2023). Regarding time planning, some women explained that they timed their

³³ The size of the house plays a role here. Many women live in apartment flats and do not have a lot of indoor (or outdoor) space available.

laundry days in low-tariff hours, for example during weekends or in the evenings (*ibid.*). As electricity prices are lower, it is smart to do it at those times. This was not seen as an option for some women with larger families and is also dependent on the type of energy contract (e.g., Maria, *pers. comm.*, 10 February 2023). Hence, the *competence* element of ‘doing laundry’ includes knowledge about using the laundry machine, but also requires experience with different programs, settings, and detergents. It links to planning skills as well, as individuals who do laundry have to evaluate how and when to plan their laundry days.

Following Shove et al. (2012), *competence* in using white goods is intertwined with traditional and defining feminine roles, but also practices of care (Petrova & Simcock, 2021). Hence, the routinised sets of practices involving *material* elements such as washing machines are associated with femininity and women (Heredia et al., 2022). By association, other practices co-occurring in this setting – ‘the home’ or ‘the kitchen’ – are also viewed as ‘feminine’ (Shove et al., 2012). *Competence*, due to their actual presence at home and interaction with materials, makes low-tech energy-saving practices ‘feminine’ (Feenstra & Clancy, 2020; Sunikka-Blank, 2020). Figure 8 demonstrates how this gendered meaning is shared between the practices linked with doing laundry and non-technical energy-saving practices as an associative element.

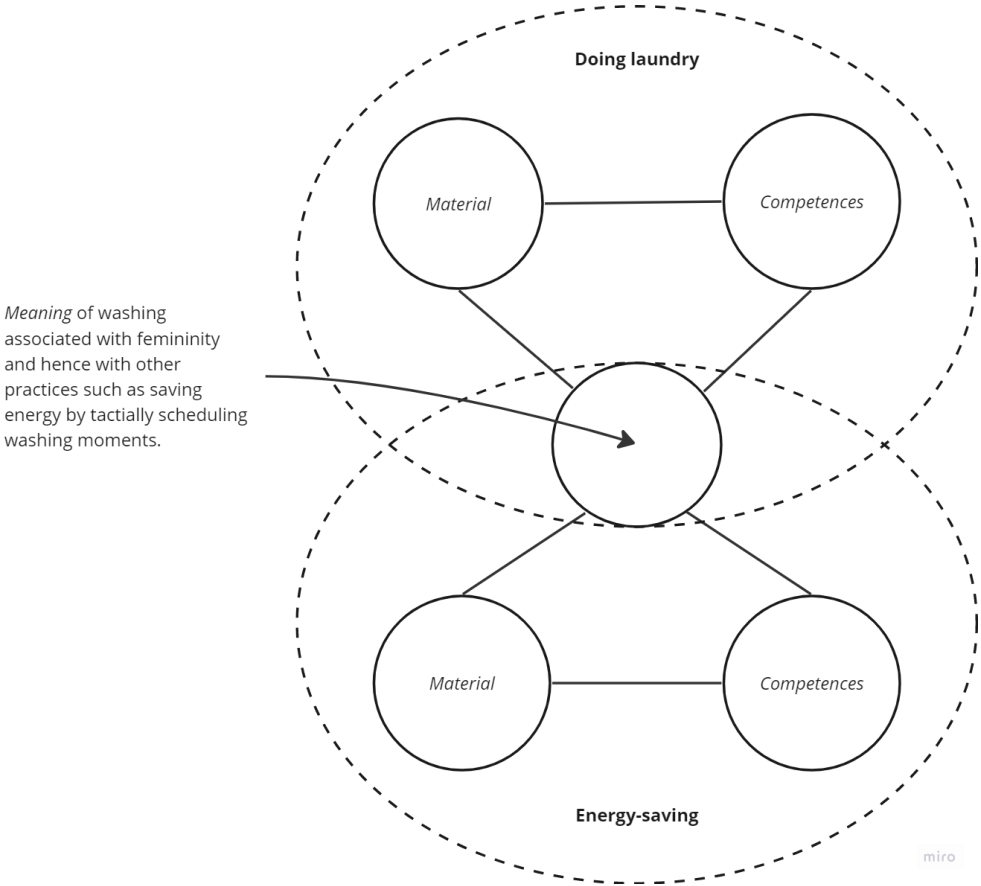


Figure 8. Gendered ‘shared understandings’ between doing laundry and energy-saving practices (Shove et al., 2012).

Energy-saving practices which are ‘non-technical’ include turning off lights, scheduling laundry days in low-tariff hours, or telling family members to limit their energy consumption (Mechlenborg & Gram-Hanssen, 2020; Tjørring, 2016).

5.3. Cultural Practices: Showering

Amongst the set of energy-saving tips in the energy lesson, but also a part of the national campaign on reducing energy consumption is the advice to ‘shower for a maximum of 5 minutes’ (Ministerie van EZK & Ministerie van BZK, n.d.). Showering with hot water consumes more energy, but also wastes water. The *Energiebox* includes a shower timer (hourglass) which times 5 minutes (Milieugesprekken, *pers. comm.*, 10 January 2023). Also during the energy lessons, this tip is recommended together with showering less often or showering at a lower temperature. ‘Showering’ can also be analysed as a social practice (Figure 9).

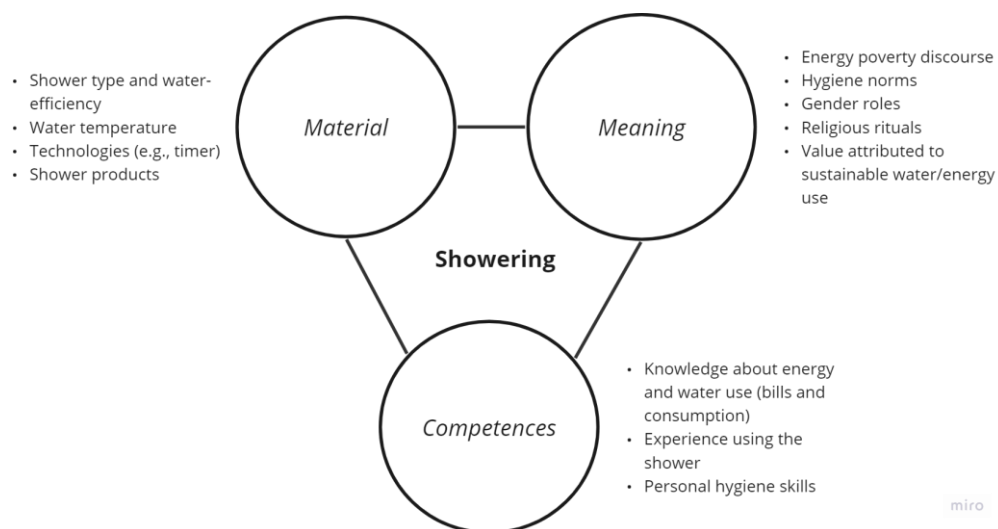


Figure 9. The practice of 'showering' (Shove et al., 2012).

While other tips were readily accepted during the energy lessons and information sessions with women I was present at, the 5-minute-shower tip was often described as “impossible” or was met with laughter (energy lesson, *pers. comm.*, 8 May 2023; 25 May 2023; women’s hour, *pers. comm.*, February 2023). A lot of women, including Sandra* who showers every morning, express a strong preference for keeping shower practices intact. Sandra, for example, explains that women simply need more time in the shower and that she views shower moments as her ‘me-time’ (Sandra, *pers. comm.*, 8 March 2023). Despite having given the lesson multiple times, not until the last lesson in late May 2023 Özlem suddenly explained that part of the Muslim faith includes ‘small washings’ and ‘large washings’ (*pers. comm.*, 25 May 2023). After being intimate with their husband, but also after menstruation, Muslim women have to undergo the ‘large washing’ (*ghusl*). The *ghusl* is a ritual washing practice which requires women to clean themselves thoroughly before they can pray.

Therefore, showering within 5 minutes is indeed not possible for many Muslim girls and women (energy lesson, *pers. comm.*, 25 May 2023). Showering, thus, has a strong cultural, but also highly gendered, *meaning*.

As shaving and using various types of personal hygiene products can also significantly extend shower times, many women also expressed that telling their teenage daughters to shower less long was bound to end in a fight. “I don’t want to tell my kids to shower shorter, but since recently I do knock on the bathroom door if it takes really long” (Moroccan mother during an energy lesson, *pers. comm.*, 9 April 2023). Women expressed that they valued having a nice atmosphere in the house over having conflicts about energy consumption (also found by Heredia et al., 2022). Herein, showering is strongly linked to feminised hygiene norms (Gram-Hanssen, 2008). In countries such as the Netherlands, showering daily has become a normalised practice which spans across social groups whereby gendered expectations about female body hair and cleanliness underlie shower practices (Gram-Hanssen, 2008; Shove, 2003).

The *material* element of washing or showering should also not be forgotten. A bath or a shower can consume energy differently. Likewise, the type of shower head is also influential as an energy-saving shower head uses half the amount of a normal or ‘rain’ shower head (Marnix van der Waals, *pers. comm.*, 14 December 2023). As mentioned above, the presence of children (especially those who do sports, for example) can also significantly impact household energy consumption. While some mothers told me that they only shower their (young) kids once or twice a week to save costs, others said they had their shower running for four to five people every single day (energy lesson, *pers. comm.*, 25 May 2023). Explicit knowledge about shower times, but also shower duration, insinuates knowledge about domestic water and energy use (*competence*) (Shove et al., 2012).

A Moroccan woman explained during an energy lesson that she had always been sustainable with her water and energy because she is aware of the environmental problems in the world (energy lesson, *pers. comm.*, 25 May 2023). She refers to the (inter)national discourse (*meaning*) on climate change but also her upbringing in Morocco.³⁴ Here, values on sustainable water and energy consumption can also affect individual motivations for showering infrequently (linking *meaning* and *competence*). Women’s knowledge of showering and the culturally-significant importance of

³⁴ The cultural background of these women returned often as examples during meetings and lessons. Many women were born in Morocco and told of the energy practices their parents used in villages. Since they grew up using little energy and using water sparingly, some said that saving practices came natural to them.

gendered hygiene rituals, and conducting energy-saving practices tends to be associated with femininity due to associative effects of 'co-location' in and around the bathroom (Shove et al., 2012).

Differences between male and female use of this space were repeated by both men and women during my fieldwork period, whereby women themselves often explained that they required more time in the shower (energy lesson, *pers. comm.*, 9 March 2023; Sandra, *pers. comm.*, 8 March 2023). Repeated use and built-up experience can have empowering effects according to Petrova and Simcock (2021). However, due to internalised ideas about typical gendered areas, technical innovations such as installing energy-saving shower heads or lowering the boiler (*cv-ketel*) to 60°C are linked to 'masculinity' and not typically carried out by women on their own (Petrova & Simcock, 2021). Many women reiterate this finding because many also ask husbands or sons to help out with innovations or installing certain energy-saving technologies like *radiatorfolie* (heater foil) or *tochtstrips* (anti-draught strips) (e.g., Sandra, *pers. comm.*, 8 March 2023).

6. Discussion

In Kanaleneiland, energy poverty is predominantly experienced at home and coped with by women. The three practices described the different elements which make up the practice but also addressed how energy poverty is understood and acted upon along gender lines. Gender, understood as a shared understanding or element between practices, is central to the performance of domestic practices in relation to energy consumption and poverty (Mechlenborg & Gram-Hanssen, 2020; Shove et al., 2012). As mentioned, the home is still, also in highly egalitarian countries like the Netherlands, one of the most gendered spaces in the Global North (Tjørring, 2016). Therefore, the intra-household perspective on energy practices is useful for analysing gendered elements in specific practices, but also for discussing how these findings relate to wider processes of in- and exclusion in the Dutch energy system.

By taking a practice approach with an intersectional gender lens, it followed up on advice by Feenstra et al. (2021b) to look at dynamics *within* households in a local context and found that gender often links to the meanings attached to certain domestic energy practices. It showed how various domestic energy practices are associated with ‘masculine’ and ‘feminine’ identities and roles, but also with gendered ways of strategizing one’s way ‘out of energy poverty’ (Petrova & Simcock, 2021). Hence, ‘gender’ – in line with Schatzki’s definition of ‘shared understandings’ – is linking competence, material *and* meaning as a “nexus of activity” (Schatzki, 2001, p. 18). For example, the unpaid ‘household’ work carried out by women in domestic non-technical or non-financial fields is associated with ‘feminine’ attributes, as is also found by other scholars (Heredia et al., 2022; Khalid & Razem, 2022; Mechlenborg & Gram-Hanssen, 2020). In contrast, economic or technical solutions to energy poverty are labelled as ‘masculine’ through their association with gendered responsibilities, materials, and competences (Shove et al., 2012). Combined with the economic, biophysical, and socio-cultural factors making women more vulnerable than men (Clancy et al., 2017), an analysis of gendered practices shows that gender differences can be valuable for how energy poverty can be understood and addressed.

A practice approach to gendered energy practices has shown that, in line with arguments by Mechlenborg and Gram-Hanssen, energy-reduction campaigns have the potential to be more effective on women as “women are generally more likely to save energy because they often have the power to decide how to do so” (2020, p. 2). As such, power refers to women’s competence in using the material elements of energy-consuming white goods and equipment, while also socio-culturally (and economically) being in charge of these practices (Petrova & Simcock, 2021; Shove et al., 2012). Feenstra et al. (2021) and Creusen et al. (2023) proclaim that not addressing these gender

dimensions in terms of economic (in)dependence, time distribution, and energy consumption patterns neglects the diversity of possible energy end-user experiences. Along these lines, (migrant) women, but also non-traditional compositions, cultural backgrounds, or people with mobility/health problems are often not discussed at a national policy level throughout the energy system (see Bokhorst et al., 2022; Puts et al., 2022; Sialino, 2021).

As a second finding relating to sub-question 1, the practice-based approach used in this thesis signified a gendered, but also a culturally-defined experience of energy poverty. At home, these gendered and cultural dimensions intersect in the example of the shower practices, for example, but also in the traditional gender roles present in many migrant communities in terms of male provider roles and female caregiving responsibilities (van de Vijver, 2007). However, culture also plays an important role in the ways women deal with energy poverty outside their homes.

By placing these findings in the context of the Dutch energy transition, an analysis of the gendered and culturally-defined practices shows that certain population groups, such as migrant women, are not sufficiently reached using formal channels. Among migrant households, language barriers, cultural differences, and widely-shared wariness towards 'white institutions' play into important and diverse dynamics at home and in relation to institutions (Grossmann & Kahlheber, 2017; Lantigua Francisco, 2022). Instead, as is seen in Kanaleneiland, personal and local approaches via 'street-level bureaucrats' or cultural NGOs like Stichting Al Amal are crucial in implementing and translating energy poverty policy effectively (Lipsky, 2010; Verloo, 2017; Wagenaar, 2020). Creutzfeldt et al. (2020) relate the trend of relying on local (informal) organisations (e.g., NGOs and neighbourhood networks) to the concept of 'nodal governance' which denotes a more adaptive and effective response to energy poverty.

Informal networks are not typically associated with strong administrative states like the Netherlands but are increasingly an object of interest (Jaffe & Koster, 2019). Verloo (2017) finds in her study in Zuilen, another neighbourhood in Utrecht, that recognition and precisely the 'absence of formality' are effective in reaching migrant women through informal initiatives. Here, the role of 'active citizens' like Amina and Khalid (as named by Rianne Bakker) are essential in bridging the deepening gap between formal policy and residents, noting that formal solutions sometimes disrupt local and informal citizen tactics (van Hulst et al., 2011; Verloo, 2017; Wagenaar, 2014). In this research, Amina helped me out too multiple times and connected me to interesting professionals and residents.

Formal institutions' reliance on informality in Kanaleneiland has two digressing outcomes for gender equality and inclusion in the context of the Dutch energy transition. On the one hand, in the

informal energy lessons, a familiar and culturally-sensitive environment is created wherein local women feel respected, seen, and understood (also found by Verloo, 2017). For example, the gendered elements of shower rituals were not revealed to me during ‘formal’ meetings, but only in the informal setting of the energy lesson at the complete end of my fieldwork period in May. Also, local (wo)men are empowered through their volunteering work (UNV Knowledge Portal, 2023). On the other hand, “the disproportionate responsibilities taken up by women in managing the consequences of energy poverty through multiple strategies and tactics” requires additional emotional and physical labour, can have adverse effects on wellbeing, and risks affecting other caring duties within households (Petrova & Simcock, 2021, p. 862).³⁵

Moreover, migrant groups risk being further marginalised as also formal actors start relying on transferring highly individualist solutions via informal channels to communicate with residents this way (for an analysis of marginalisation and energy poverty see Lantigua Francisco, 2022). This can have consequences in terms of equal access to information and policy support since migrant groups can miss out on subsidies and participation opportunities, reducing socio-economic equality. Also, the focus on domestic energy practices as a solution to a structural problem such as energy poverty further reinforces individualist values which place responsibilities on citizens in light of a ‘failing’ government (Creutzfeldt et al., 2020; Norris, 2011). The local practice approach taken in this study reveals how gendered, but also culturally defined, responsibilities in the domestic sphere make women ‘double vulnerable’ to energy poverty but also makes them ‘double responsible’ for energy-saving practices (Crenshaw, 1991; Simcock et al., 2021).

³⁵ Some energy lesson volunteers were not available for interviews because they had no spare time next to their regular responsibilities. These include taking care of their children, but also, in one instance, a sick husband (*Whatsapp communication*, March 2023).

7. Conclusion

Through an analysis of domestic energy practices in Kanaleneiland, Utrecht, the gendered, but also culturally defined, experiences of energy poverty were studied. It was found that gender is not only a factor which enhances the vulnerability of women in terms of economic, biophysical, and socio-cultural dimensions (Clancy et al., 2017), but also specifically through the (re)negotiation and performance of certain energy practices as inscribed by materials, but also gendered competences and associated meanings. Herein, cultural or migration background came up as a relevant factor in Kanaleneiland. Culture, like gender, suffuses practices, but also affects how households interact and deal with their situation. Hence, informal networks are found to be important sources of information, community, and support in Kanaleneiland.

The research question, *How is energy poverty understood and acted upon through gendered practices in Kanaleneiland, Utrecht?*, can be answered in these two ways, too. On the one hand, energy poverty is a highly domestic issue tackled and addressed by women. A practice approach showed that women are more likely to spend more time at home, interact with energy-consuming materials the most, and are responsible and competent in implementing low-tech energy-saving practices to lower their energy bills. In contrast, men are often more interested in technical solutions. A gendered perspective on energy poverty in the domestic sphere places energy-saving strategies in the female domain, making it a gendered problem that is addressed and experienced differently between men and women. Notably, the mental effects of being responsible for energy-saving at home *or* providing for one's household can be differentially experienced between men and women as affected by one's household composition, age, health, and migration background.

On the other hand, my research specifically shows that (migrant) women in Kanaleneiland are disproportionately exposed to energy poverty and have limited equal access to municipal resources and services. Instead many women (and men) tend to rely on informal neighbourhood networks. These neighbourhood networks are decidedly local, often share the same cultural background, and are also often 'feminine'. Low participation by this group is acknowledged by street-level bureaucrats and is addressed via the conscious use of these informal networks and through other volunteering (migrant) (wo)men. The availability of these services leads to shifting ways in which energy poverty is understood and acted upon. Quite directly in terms of improved competencies and access to information over the course of the past months, but also indirectly in terms of feelings of belonging, being heard, or releasing stress through conversations with peers through informal networks, meetings, and local initiatives.

To improve the inclusivity of the current ways in which energy poverty is addressed in Utrecht, specifically to increase participation among (migrant) women in the energy transition, several recommendations are suggested. Firstly, the diversity of energy end-user experiences should be reflected in energy (poverty) monitoring. Including gender-disaggregated data, but also information on cultural background, household composition, inter-household dynamics, and intra-household effects could be tracked. Being aware of gender differences is fundamental for seeking inclusive and effective policy solutions that reflect the experiences of individual energy users. Secondly, cultural and language sensitivity is crucial when communicating with people with a migration background. This is a primary barrier experienced by citizens and acknowledged by professionals. Offering transparent and accessible places for translation or providing information in multiple languages is useful to reduce unequal knowledge transfer and avoid translation errors. This can be achieved using city- or neighbourhood-level informal networks and acknowledging the value of local knowledge. Collaborations with active citizens and local organisations are found to be effective in reaching notoriously hard-to-reach population groups, thereby increasing central pillars of the energy transition: participation and inclusion. Thirdly, the structural inequalities underlying energy poverty experiences should be better acknowledged. Referring back to the classic energy poverty triad, improving the housing stock is a primary concern, but is currently not always sufficiently addressed nor possible for all citizens. Considering gender and cultural structural inequalities, recognition of the continued pay and working gap between men and women, but also the discriminatory practices marginalising migrant citizens is important to achieve an inclusive and just transition.

7.1. Limitations and Avenues for Future Research

The small sample size of this thesis is a limitation in terms of generalisability. As nearly all participants were of Moroccan descent, my findings are typically applicable to this minority group. However, as the purpose of this thesis was to elucidate specific energy practices within households, it is relevant for those who look to gain a more nuanced and subjective insight into the gendered elements at play in a specific geographical and socio-cultural context. Nevertheless, future research can compare gendered practices across and between social groups. These can include other nationalities such as the Turkish community, and (new) immigrants like Syrians or Ukrainians, but can also look at other intersectional vulnerabilities like people with disabilities or specific age brackets. Herein, future studies on migrant communities and energy poverty could benefit from researchers with a broader set of language skills to avoid translation errors and losses. Furthermore, using more extensive and multiple interviews over time can deepen the quality and reliability of my findings.

As this study is highly qualitative in nature, it can be interesting to cross-check my findings with quantitative analyses. Currently, gender-disaggregated and cultural data is not (yet) available on energy poverty at a scale that considers members within households. However, future studies can make an effort to look into this further.

Furthermore, the timing of this study strongly affects the findings, reducing replicability. Even though reproduction is not necessarily the projected aim of this study – once again referring to its purpose of complementing statistical analyses and giving insights into the diverse experiences of energy poverty – the ‘newness’ of energy poverty in Dutch society made the winter and spring of 2022/2023 an interesting time to study the phenomenon. The energy poverty policy landscape also shifted significantly during this time frame. It can be interesting to track or compare how policies are experienced at different moments in the energy crisis. Due to a small sample size and focus on gendered practices instead of policy, this has not been included in the present study. However, future research can delve deeper into the (discretionary) work going on behind these policies at various governance levels, from national to street-level bureaucracy. The effectiveness of newly tested policy solutions which were implemented first in the winter of 2022/2023 can be evaluated in upcoming studies.

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Appendices

Appendix 1: Energy Poverty in the Netherlands: Background and Policy

Between 2020 and 2022 the average supply price for gas and electricity increased five-fold: 526% for gas and 540% for electricity whereby the biggest price increase occurred between 2021 and 2022 (Mulder, Batenburg, et al., 2023). The Netherlands did not monitor energy poverty as a separate issue from general income poverty before the 2020 White Paper by research institute *TNO* (Straver et al., 2020). Between 2020 and 2022, the total number of energy-poor households increased from 90.000 to 602.000 households (Mulder, Batenburg, et al., 2023).

As of late 2022, following months of rising energy prices and inflation of key consumer goods, the Dutch government started with the first series of targeted policy measures (a list of national and municipal measures can be found at the end of this Appendix). Due to the highly decentralised structure of the Dutch government, municipalities are relatively free in the implementation of national policies. Therefore, there can be substantial differences between municipalities.

The energy quote is not used as an official indicator to measure energy poverty,³⁶ but it does give insights into the increasing household energy bills in the last two years (Mulder, Batenburg, et al., 2023). Table 1 shows the comparative energy costs for households between 2020 and 2022. From this can be derived that energy poverty is most common among tenants in houses with the lowest energetic quality (LIHE/LIZLEK). Two-thirds of the total number of energy-poor households live in a house with energy labels G and F (Mulder, Batenburg, et al., 2023).

Table 3. Energy quote and monthly energy costs in % and € between 2020 and 2022.

Indicator	Baseline 2020	2022
<i>% Energy-poor households</i>		
All households	4.2%	7.8%
LIHE/LILEK	9.0%	12.7%
LIHE/LIZLEK	11.2%	16.3%
<i>Monthly energy costs of energy-poor households</i>		
All households	€ 125,55	€ 256,00
LIHE/LILEK	€ 124,55	€ 190,23
LIHE/LIZLEK	€ 149,40	€ 247,91

Considering housing types, nearly 40% of energy-poor households live in a ‘multiple family house’ (such as flats), 66.9% lives in social corporation housing, 20% in a free sector rented property, and just

³⁶ Reasoning behind this is that it obscures ‘hidden energy poverty’ and also covers households with sufficient income levels who might not fit within the classic triadic definition of energy poverty (Mulder, Dalla Longa, et al., 2023).

13% is a homeowner.³⁷ Therefore, especially neighbourhoods with high levels of (social) regulated rent energy poverty is more prevalent as poor-quality housing and low incomes coincide (Bouzarovski et al., 2020; Bouzarovski & Tirado Herrero, 2017; Mulder, Batenburg, et al., 2023). While energy poverty is geographically concentrated in the North-eastern provinces of the Netherlands, especially in rural areas, 2022 data points towards an expanding issue in bigger cities (Mulder, Dalla Longa, et al., 2023).

Measures from October 2022-May 2023

These are all tailored to Gemeente Utrecht as municipalities have freedom to decide the date, target group, income boundaries, and size of the *energietoelage*.

- Financial compensation measures 2022 (from Mulder, Batenburg, et al., 2023):
 - *Energietoelage* (energy bonus). Households earning up to € 1,310.05 (single) or € 1,871.50 (couples) a month (approximating 120% of the legal social minimum) are eligible for an energy bonus of € 1300.
 - *Lower electricity tax*. The energy tax in 2022 is € 0.057 (excl. VAT) per kWh lower than in 2021. Households pay € 0.0368 (excl. VAT) on energy taxes per kWh.
 - *Higher return on energy tax (incl. VAT)*. In 2022 this amount increased from € 560 to € 785. Therefore, households receive a discount of € 225 (incl. VAT). It is a fixed discount irrespective of energy consumption.
 - *Lower VAT on remaining part of the energy bill*. From 1 July-31 December 2022 the VAT on energy (natural gas, electricity and district heating) is lowered from 21% to 9%. The lower VAT is applicable to all parts of the supply-side of energy (administrative and net management costs).
 - *Extra general discount*. In anticipation of the energy price ceiling in 2023, every household receives an additional discount of € 190 in november and in december.
- Measures in 2023:
 - *Energieprijsp plafond* (energy price ceiling). Price ceiling on gas (€ 1,45 per m³), electricity (€ 0,40 per kWh) and city heat (€ 47,38 per GJ) which caps prices at certain consumption amounts. This gives many households a discount.³⁸
 - *Extra energietoelage* (additional energy bonus). In February 2023 all households who received € 1300 in 2022 receive an additional € 500.
 - *Tijdelijk Noodfonds Energie* (Temporary Emergency Fund Energy). Per February 2023 this Fund provides for households earning up to 200% of the legal social minimum who spend more than 10-13% of their shared income (incl. VAT) on energy retroactive financial support with their energy bills between October 2022 and March 2023. Due to popular demand, applications were accepted until May 5th.³⁹
- Specific measures in Gemeente Utrecht:
 - *Aanvullende vergoeding energiekosten* (additional compensation energy costs). Possible for households who are still unable to afford their regular *energietoelage*

³⁷ Social corporation housing in the Netherlands is reserved for low-income households only and is price capped (in 2023 max. € 808,06). Low-income households can also make use of additional subsidies like the *huurtoelage* to help pay for rent (SSW, 2023). Tenancy also affects the 'ability to participate in the energy transition'. Three-quarters of all households who are unable to invest in sustainability in their own home are tenants (around 1 million, or 13.1%, of Dutch households) (Mulder, Batenburg, et al., 2023).

³⁸ <https://www.rijksoverheid.nl/onderwerpen/koopkracht/plannen-kabinet-met-prijsp plafond-voor-gas-en-elektriciteit>

³⁹ <https://www.noodfondsenergie.nl/>

but are also not eligible for the Tijdelijk Noodfonds Energie. It is dependent on income, but also assets, and the monthly energy bill.⁴⁰

- *Tijdelijke witgoedregeling* (Temporary white goods measure). Low-income households can apply for a new energy label A white goods by BCC and return their old goods. Limited quantities while stocks last.
- *Energiebox*. Initiative by Mitros, Portaal, JMA and Gemeente Utrecht. A free box for tenants with a selection of energy-saving tools and products, also including a free consultation with a volunteer energy coach.⁴¹

⁴⁰ <https://pki.utrecht.nl/Loket/product/32f79f35fd714a6260762751659beb51>

⁴¹ <https://energiebox.org/>

Appendix 2: Interview Guides

Interview Guide (Citizens)

The following guide is inspired by TNO/LSABewoners, received per private correspondence. The actual use of these questions was flexible and depended on the time availability and personal preferences of the participants.

Vragen over de woning en uw huishouden

- Wat zeggen vrouwen over hun woonsituaties? (huur, koop, fijn/niet fijn)
- Wat voor huishouden leven deze vrouwen in? (aantal, samenstelling, kinderen, leeftijden, gezondheid)
- Wie is er verantwoordelijk voor het merendeel van het inkomen?
- Wanneer zijn deze vrouwen thuis? / Zijn ze veel thuis?
- Wat is de staat van hun woning? (m.b.t. energiezuinigheid of schimmel/tocht)

Over het energiegebruik in uw huis

- Hoe gemakkelijk is het om de woning warm of koel te houden?
- Hoe betaalbaar zijn de energierekeningen nu? (heeft dit impact op energiegebruik? Invloed op andere uitgaven of rekeningen?)
- Welke ehuislektrische apparaten zijn aanwezig in die energie gebruiken?

Wat doet u om het toch behaaglijk of comfortabel te hebben?

- Wat voor strategieën worden al gebruikt?
- Welke strategieën zijn nieuw of verrassend?
- Verduurzaming in huis?
- Hoe wordt de energierekening betaald? (ten koste van, toeslagen)
- Wat voor (financiële) hulp gebruiken ze? (informeel of formeel)

Bredere effecten

- Effecten op lichamelijke gezondheid?
- Effecten op geestelijke gezondheid?
- Invloed op gevoel van comfort en vertrouwen?
- Invloed op sociale leven?
- Kwaliteit van sociale netwerk?
- Mogelijkheid om mee te doen in de samenleving?
- Financiële hulp?
- Wat zal u helpen?

- Wie kan u het beste helpen?

Interview Guide (Professionals)

This guide is flexibly adapted to fit each organization and professional. Some questions are left out or asked in a different order during some interviews.

Over de organisatie:

- Wat is X?
- Waar zijn jullie actief?
- Wat voor diensten bieden jullie? En aan wie?
 - Hoe zijn die opgezet/gestart?
- Hoe werken jullie?
 - Procedures, contact leggen, samenwerkingen, etc.
- Wie werken er bij jullie (in Kanaleneiland)?
 - Achtergrond van deze mensen? Welke talen/culturen? Opleiding? Gezondheid?
- Wat maakt Kanaleneiland uniek?

Over professional zelf:

- Wat is jouw achtergrond/rol bij X?
- Waarom ben je bij X gaan werken? Waarom is het belangrijk?
- Wat vind je van je werk?

Over energiearmoede:

- Is energie een onderwerp dat veel besproken wordt bij X?
 - Op wat voor manier?
 - Wanneer begon dit? Is dit meer/minder geworden sinds oktober 2022 en sinds januari 2023? Hoe zit het nu?
- Hoe zou jij energiearmoede omschrijven?
 - Is dit iets dat losstaat van andere vormen van armoede? Of eigenlijk niet?
- Wat voor huishoudens komen bij jullie?
 - Achtergrond, talen/culturen, gender, economische status, woning, gezondheid?
 - Is dit representatief voor de mensen die hier last van hebben, denk je? Wie missen er mogelijk?
- Met wat voor vragen komen mensen bij jullie?
 - Welke vragen hebben ze?
 - Wat vinden mensen het lastigste? / Wat voor barrières ervaren mensen?
- Hoe wordt energiearmoede ervaren?
 - Hoe uit het zich? (emoties, strategieën)
- Hoe helpen jullie mensen met vragen over energie?
 - Taal-sensitieve hulp?

Over gender en energieverbruik:

- Wie beheert de (energie)rekening thuis?
- Wie is er verantwoordelijk voor het huishouden?
- Hoe gaan mannen of vrouwen om met energiearmoede?
 - Prioriteiten of kennis?
 - Soorten strategieën?

Over beleid en implementatie:

- Hebben jullie te maken met nationaal of lokaal energiearmoedebeleid of -maatregelen?

- Op welke manier?
- Wat vinden jullie van het beleid van de overheid en de gemeente?
- Hoeveel vrijheid ervaar je als vrijwilliger/medewerker om beleidsimplementatie zelf in te vullen?
 - Wat prioriteer je?
 - Zijn er momenten waarbij beleid of bureaucratie je in de weg kunnen zitten?
 - Kan je voorbeelden bedenken waarbij dit gebeurde?
- Is er iets dat veranderd kan worden aan het huidige beleid waardoor mensen beter geholpen kunnen worden?
 - Zijn er nog andere dingen die moeten veranderen zodat mensen minder snel in de problemen komen met hun energierekening?

Appendix 3: Consent Forms

Consent Form (Citizens)

Informatie-toestemmingsformulier (Nederlands)

Dit informatie-toestemmingsformulier wordt uitgegeven om vast te stellen dat u bekend bent met de inhoud en doel van dit interview en uw rechten als geïnterviewde. Het interview zal ongeveer 30-60 minuten in beslag nemen. Het gaat over uw energierekening en uw ervaringen met de hoge energieprijzen.

Door dit formulier te tekenen geeft u toestemming voor het delen van de inhoud van dit interview met de onderzoeker. Deze zal veilig opgeslagen worden en alleen voor dit onderzoek gebruikt worden. Als u wilt, kan uw naam en/of informatie geanonimiseerd worden. U kunt ook aangeven of u akkoord gaat met het opnemen van het interview. Vooraf aan het interview zal dit met u besproken worden. U kan uw antwoorden op ieder moment terugnemen of het interview verlaten.

Dit onderzoek maakt deel uit van mijn scriptieonderzoek naar de ervaringen van vrouwen tijdens de Nederlandse energiecrisis als onderdeel van de MSc Sustainable Development (Utrecht Universiteit).

Ik wil graag dat mijn naam wordt geanonimiseerd: JA / NEE

Ik stem in met het opnemen van de audio van dit interview: JA / NEE

Ik stem in met dit interview en ken mijn rechten als geïnterviewde: JA / NEE

Naam: _____

Handtekening: _____ Datum: _____

Interviewer:
Tess Beukema, MSc Sustainable Development (UU)
+31636435267
t.f.m.beukema@students.uu.nl

Informatie-toestemmingsformulier (Nederlands)

Dit informatie-toestemmingsformulier wordt uitgegeven om vast te stellen dat u bekend bent met de inhoud en doel van dit interview en uw rechten als geïnterviewde. Het interview zal ongeveer 30-60 minuten in beslag nemen. Het gaat over energiearmoede, energiearmoedebeleid en gender in Kanaleneiland, Utrecht.

Door dit formulier te tekenen geeft u toestemming voor het delen van de inhoud van dit interview met de onderzoeker. Deze zal veilig opgeslagen worden en alleen voor dit onderzoek gebruikt worden. Als u wilt, kan uw naam en/of informatie geanonimiseerd worden. U kunt ook aangeven of u akkoord gaat met het opnemen van het interview. Vooraf aan het interview zal dit met u besproken worden. U kan uw antwoorden op ieder moment terugnemen of het interview verlaten.

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Ik stem in met dit interview en ken mijn rechten als geïnterviewde: JA / NEE

Naam: _____

Handtekening: _____ Datum: _____

Interviewer:
Tess Beukema, MSc Sustainable Development (UU)
+31636435267
t.f.m.beukema@students.uu.nl

Appendix 4: Recruitment Flyer

The following flyer was distributed in WhatsApp groups of the neighbourhood and were also printed to be handed out during meetings, energy lessons and women's hours.

**Masterscriptie-onderzoek naar de
ervaringen van vrouwen met de hoge
energieprijzen**

Last van de hoge energieprijzen?

Bent u een vrouw die woont u in
Kanaleneiland? Heeft u ook te maken
met hoge energieprijzen of heeft u
moeite met financieel rondkomen?
Dan zoek ik u!



Contact

Tess Beukema, student *Universiteit Utrecht*
06-36435267 (Whatsapp, SMS of bellen)
t.f.m.beukema@students.uu.nl

Appendix 5: Coding Scheme

Deductive codes inspired by practice theory and energy poverty literature. Inductive codes are in *italics*.

Codes

Gendered energy practices

Description of practices

Coping practices

Support-seeking practices

Elements of practice

Material

Meaning

Competence

Gender

Economic

Socio-cultural

Biophysical

Other elements

Culture

Mobility/health

Age

Language

Energy poverty

Classic triad

High (energy) bills

Low incomes

Poor-quality housing

Impacts

Immaterial impacts

Material impacts

Initiatives and projects

Barriers or obstacles

Solutions

Gender-sensitivity and inclusion

Appendix 6: Energy Lessons

The following photos give an impression of the energy lessons given by the volunteering women and men trained by Energie U. The top left picture is taken at the local primary school (9 March 2023), the top right during a woman's hour (13 March 2023), and the bottom left picture is from an energy lesson at Al Amal (25 May 2023).

