

Perspectives on energy-related sustainable measures in neighbourhood De Meeuwen, Groningen

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Summary

In this bachelor project research is conducted on the perspectives on taking sustainable measures, mainly focusing on measures related to the energy transition, within one neighbourhood. The central question discussed is: How do inhabitants of De Meeuwen in Groningen perceive their role at neighbourhood level in taking sustainable, energy-related measures? A mixed method of both quantitative and qualitative research is used to give a good overview. In the neighbourhood, there turns out to be a small, willing and interested group of people. The measures they are interested in are mainly solar panels, green roofs and electric cooking. The participants are highly aware of climate change in general and the risks, however they are not aware of the consequences of the goal of the municipality to be CO₂ neutral in 2035. The results indicate that citizens perceive their main role to be informed about their behaviour and the effects of their behaviour, taking action according to your ability and resources and inspiring others while doing so. They indicate that they need support, mainly in the form of coordination and inspiration, which can be given for example by a neighbourhood initiative or the municipality.

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1. Introduction

For many reasons, action against climate change is both relevant and urgent (IPCC, 2018). There are as many strategies and solutions for climate change as there are contexts for these strategies and solutions. Focus on decentralised and localised action is becoming more important. In the Netherlands, municipalities are more in power, governance is the new government (Loorbach, 2010). It is relevant to know more about the processes of governance in climate action. Literature stresses the need for participatory governance, bottom-up initiatives and involvement of citizens (Hisschemöller & Sioziou, 2013). Many studies have been done to gain insight into factors contributing to or counteracting sustainable behaviour (Steg et al., 2005; Kollmuss & Agyeman, 2002; Lorenzoni et al., 2007). However, it is not always clear how citizens perceive their role, and whether they are willing to participate or act on their own. By definition, governments cannot force bottom-up approaches for climate action. It is relevant to study how citizens perceive their role in the energy transition. Citizens can take action individually, or collectively, for example in citizen initiatives.

This research aims to give insight into perceptions of citizens in De Meeuwen, towards the energy transition and specifically towards their role in this. The research is conducted in collaboration with neighbourhood initiative De Energieke Meeuwen (the Energetic Gulls), which operates in their neighbourhood, De Meeuwen. For a complete overview, a mixed method is chosen. The research question is analysed by the means of quantitative and qualitative research.

This research is done in neighbourhood De Meeuwen, which is part of the municipality of Groningen. The municipality has set the goal to be CO₂ neutral in 2035 and ‘climate ready’ in 2050 (Gemeente Groningen, 2018; Gemeente Groningen, 2020). According to the latest report, this goal is technically feasible. The challenge is lies in encouraging everyone to participate in this. This involves the citizens, companies and organisations and the municipality and other governmental organisations. However, from research conducted in 2019 it is clear that not many inhabitants have knowledge about the measures and consequences (Gemeente Groningen, 2020). What stands out as well from the research, is the responsibility the participants give to central government and municipality, while they perceive their own responsibility much lower (Gemeente Groningen, 2020). This is opposite from what the municipality expects from the inhabitants and also contradicts the rise of bottom-up approaches and citizen involvement. After all, the energy transition relies heavily on home owner’s cooperation and willingness (SCP, 2020). Thus, it is very relevant to know what the situation currently is and how the citizens perceive this goal, the different roles and their willingness to act.

To understand this, the following question is central in this research:

How do inhabitants of De Meeuwen in Groningen perceive their role at neighbourhood level in taking sustainable, energy-related measures?

In order to understand their perceptions, their willingness and motives need to be studied as well. Sub questions that will help in answering the central question are:

- To what extend are inhabitants of De Meeuwen willing to take sustainable measures at neighbourhood level?

- What are their main motives for taking measures or not taking measures at neighbourhood level?
- What are their perspectives on climate change, on the roles (of government, organisations and citizens), risks of climate change and barriers?

The aim of this research is to understand how different factors play a role in the willingness and perception on roles, specifically focussing on energy measures. This paper is structured as follows. First the theoretical framework will be discussed, including a conceptual model. In the methodology an extensive overview of the used research method is described. The results will be discussed in two parts, first the qualitative results, after that the quantitative results. A consideration of theories and contribution to the field of planning will be discussed in the discussion. In the conclusions section, the research questions are answered. At the end is a short reflection on the research process.

2. Theoretical framework

There are various terms for sustainable action, for example: pro-environmental behaviour, climate action and sustainable measures. Pro-environmental behaviour can be defined as behaviour that minimizes the negative impact on the environment, for example, this can be done by recycling, reducing energy consumption or reducing waste (Pratiwi & Pratomo, 2018). In this research, the focus is on reducing energy consumption.

Studies show that in general, people are positive towards pro-environmental behaviour, are aware of climate change and they indicate that they are willing to contribute to solutions, but in practice behavioural change is lacking (Lorenzoni et al., 2007). It appears that not only their beliefs and motivations are important, but there is a gap between their beliefs and their behaviour. Many scholars have studied this gap, especially in environmental psychology. The difficulty to go from belief to action, is mainly influenced by barriers (Lorenzoni et al., 2007). Barriers that are identified in literature are: lack of efficiency, lack of interest, laziness, lack of time, lack of money, lack of information, lack of control (Blake, 1999, cited by Kollmuss & Agyeman, 2002, p. 247). The theory of planned behaviour of Ajzen (1991) gives insight into the factors contributing to behaviour. He argues that the attitude towards behaviour, the subjective norm and perceived behavioural control influence intention, which influences behaviour (Ajzen, 1991). More research has been done based on this theory about behaviour, however, it is clear from research that pro-environmental behaviour cannot be caught within one framework or one theory (Kollmuss & Agyeman, 2002).

In the field of energy transition, literature increasingly focuses on the importance of *citizen initiatives*, *bottom-up approach* and *collective action*. Collective action is important because both problem and solution are perceived at group level (Tosun & Schoenefeld, 2017). A vital part of the energy transition is the involvement and support of citizens (Kalkbrenner & Roosen, 2016). Collective action is defined by Tosun & Schoenefeld (2017) as when an individual represents a group and with the action improves the situation of the group. Some discuss this in the context of how citizen initiatives can lead to higher awareness (Thaler & Seebauer, 2019). *Community energy* plays a large role in the German energy transition, as is discussed by Kalkbrenner & Roosen (2016). The success of community energy projects depends on volunteers and investors. Although community energy consists of many forms, the central idea is the involvement and ownership of citizens, acting collectively, in the energy transition.

Perceptions on climate action are mostly discussed in the context of perception on risk of climate change (Grover, 2017; De Boer et al., 2016). It is stated that communication is key in increasing

willingness to participate in climate action (De Boer et al., 2016). Climate action is heavily influenced by the perception on climate change. Weber (2010) discusses which factors influence *perceptions on climate change*. She concludes three important ones: social and moral responsibility, risk perception and the ability to balance uncertain future costs and present certain costs. Aiming for activating social and moral responsibility has the highest chance of having a lasting impact, she argues. This can be done by creating rules, which can be legal or social (Weber, 2010). Thus implying the large influence of context on an individual. The ability to balance uncertain future costs and present certain costs is low in general and even when high, the chance of unforeseen side-effects is high (Weber, 2010). This makes analysis-based policy not the best choice for encouraging environmental action. *Risk perception* influences what measures people are prepared to take (O'Connor et al., 1999). For this study, we use the definition of O'Connor et al. (1999) for *risk perception*: “the perceived likelihood of negative consequences to oneself and society from one specific environmental phenomenon: global warming” (p. 462).

In discussing the views on climate action, *capability* of a community or individual are also important to study. Would a community or individual feel that either an action would not work or would not have impact, then their views on climate action and their willingness to do something, is low (Kollmuss & Agyeman, 2002).

Conceptual model

As discussed in the theoretical framework, pro-environmental behaviour is complex. This research will focus on the perceptions of citizens on their role on neighbourhood level. Thus the focus lies on studying how they perceive their own behaviour, rather than how their behaviour works.

To understand how citizens perceive their role in the energy transition, the different processes and factors contributing to that need to be studied. Figure 1 shows which relations will be examined in this research. This conceptual framework is inspired by literature about environmental psychology, environmental social science and behavioural science, which is also described in the theoretical framework. *Willingness* is defined in this case as the level of preparedness to take environmental action at local level. Research shows that the first step towards environmental action is willingness, which can be increased or decreased by certain factors (Kalkbrenner & Roosen, 2016). *Awareness* in this research is defined as knowledge and involvement in climate action, both locally and globally. Awareness in this case includes the perceived risks and consequences of climate change on local and global level. Public awareness about climate change is high, studies show, but real concern and action are lacking (Lorenzoni et al., 2007). *Capability* is in this research defined as how able an individual is, based on their abilities, knowledge, feeling of recognition and resources. Thus in this research the concept is similar to the theory Sen (1988), but not used in the same way. This includes the perceived behavioural control described by Ajzen (1991) and the perception on the impact discussed by Kollmuss & Agyeman (2002). By the *social and physical context* the following is meant: personal and work related contacts and other social contexts such as the neighbourhood. Context also involves the influence of community and *social norms* discussed by Kalkbrenner & Roosen (2016). This also includes the social and moral responsibility identified by Weber (2010).

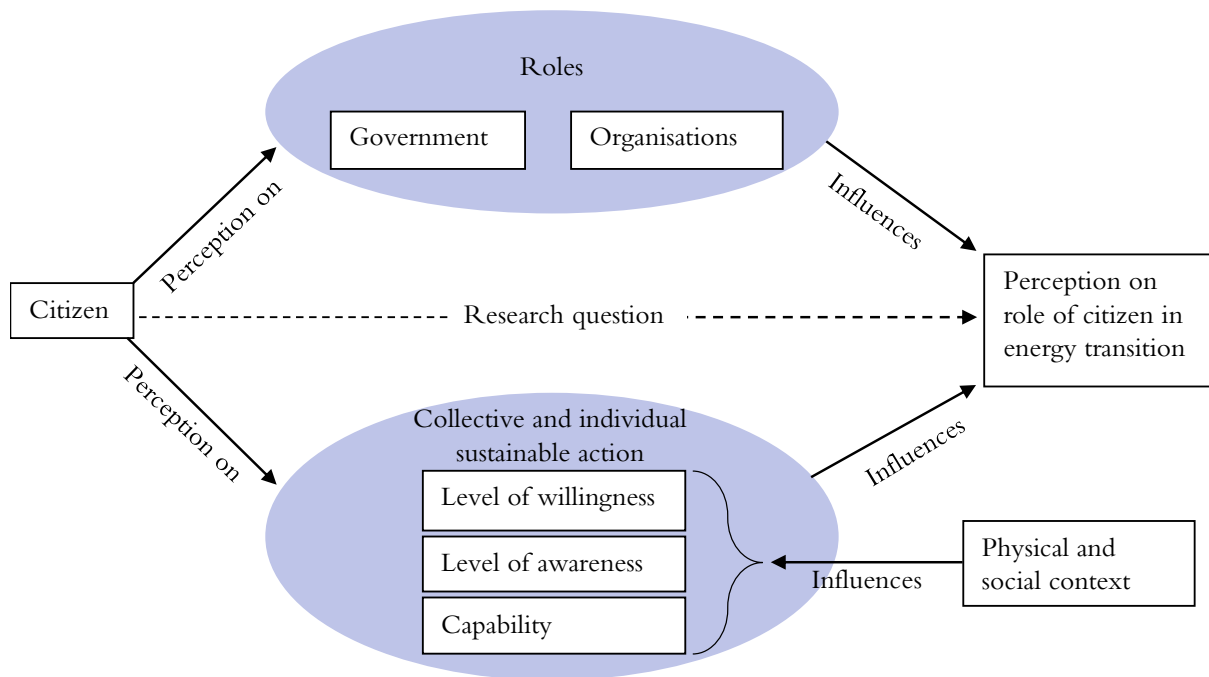


Figure 1: Conceptual model

3. Methodology

This research is a case study of the neighbourhood De Meeuwen in Groningen. In this neighbourhood, a citizen initiative, De Energieke Meeuwen, which mainly focuses on collective investments in energy-related measures has just started. A collaboration between student and neighbourhood initiative was created for the sake of exploring how citizens perceive individual and collective investment in sustainable measures. Due to this collaboration, this research has elements of participatory action research (PAR). There are many forms of PAR, but the main goal is involving and building on the knowledge of the object you want to study (Clifford et al., 2016). The citizen initiative was contacted for a general focus of the quantitative research and also for specific elements in the questionnaire. Knowledge and feedback were exchanged in both ways. They received a report with an overview of the results from the questionnaire, including an overview of which measures the households are interested in, specifically mentioning their address.

In this research, a mixed method is used. The first two sub questions are mainly answered by a quantitative study, by the means of an online questionnaire. The aim of this part is to get a general overview of the motives and willingness. The third sub question is answered with a qualitative study, by the means of 4 online interviews. The aim of this part is to understand in-depth why inhabitants are taking measures or not, and what there perspectives are.

Data collection and analysis

The interviews are semi-structured. This is because this research focuses on feelings, values and opinions, so a fully structured interview would not suffice, neither will an unstructured interview. See Appendix 5 for a complete overview of the questions asked in the interviews. All participants of the questionnaire signed a letter of consent, see Appendix 3.

The participants of the questionnaire are not selected, every household in De Meeuwen has received the invitation to fill in the questionnaire. The participants of the interviews are selected based on their differences in motives, to more fully understand these different motives. Before

starting the questionnaire, the participants read what the research is about and how the data will be managed, and agreed to participating. This letter of consent can be found in Appendix 2.

In total, De Meeuwen consists of around 260 households. 59 participants responded to the questionnaire. The group participants is quite homogenous. Almost all participants indicated they were interested in investing in a sustainable measure. All members of the neighbourhood initiative were participants in the questionnaire, in total the initiative consists of 7 people, later on an 8th member joined the initiative group, who also filled in the questionnaire.

For the qualitative analysis, 4 participants were invited to participate in an interview. This amount of interviewees was chosen to gain understanding of different views and opinions within the neighbourhood. They were selected on their heterogeneity. This was done by analysing their answers of the questionnaire and selecting a diverse group of participants, mainly based on their motivation.

Participant	Motivation and description
Interviewee 1	Very aware. Idealistic and worries about climate change.
Interviewee 2	Idealistic and saving energy. Very willing but does not have much information or knowledge.
Interviewee 3	Very aware. Idealistic, worried about risks. Has many ideas and comments, very involved.
Interviewee 4	Save energy and money. Not worried about risks.

Table 1: Description of the participants of the interviews

The questionnaire is analysed in a descriptive way for the neighbourhood initiative. The interviews are analysed using coding. For the used codes, see appendix 1. After coding, the transcripts are compared to each other to find relations.

The data is managed, collected, analysed and published in a careful way. This means that the data is stored on a password-protected computer and will not be shared with third parties. The raw data from the questionnaire and interviews will be deleted after 1 year. The transcripts of the interviews will be deleted after 2 years. A more extended overview of data management can be found in the letter of consent for the interviews, see Appendix 3. There is one exception on the sharing of data, which will be discussed in the next paragraph about ethical considerations.

Positionality and ethical considerations

I am aware that my position regarding taking measures against climate change is rather positive. After studying the citizen initiative, it is concluded that this is the same for them. This can cause misunderstandings during the research, between the researcher and the participants. I will remain neutral in conducting the research. My position during the interviews is open and respectful.

After consultation with the citizen initiative, it has been decided that the questionnaires are not fully anonymous, unless the participant indicates otherwise. This decision is considered consciously, with the condition that it is stated clearly what the participant agrees to and with the option of remaining anonymous. The specific address in combination with the interest in certain measures is useful due to the fact that the neighbourhood initiative can target the interested households more effectively. The only data that is linked to the address of the participant and shared with the initiative is the interest in specific measures. All other data, including all data gathered during the interviews, will be published and shared anonymously.

4. Analysis

Quantitative analysis

The quantitative analysis is mainly focused on answering sub question 1 and 2, thus focussing on the level of willingness and the main motives to act sustainably. Especially sub question 1 is relevant for the neighbourhood initiative, since they are curious about the support base for taking measures.

Willingness

As mentioned in the method section, the sample was quite willing and motivated to invest in sustainable measures. This can be concluded among other data, from the fact that 95% of the respondents indicates that the theme 'climate' is very or pretty important, 96% of the respondents indicates that the theme 'sustainability, related to energy issues' is very or pretty important for them. Against respectively 5% and 4% who respond that it is not important for them. Furthermore, 75% of the respondents has already invested in at least one sustainable measure in their current house, 15% is planning on investing in a sustainable measure but has not invested yet.

The willingness within the sample was quite high, as indicated. Figure 2 shows which measures were most often chosen. Many respondents also indicated they already had solar panels on their roofs, indicating that the number of people that are interested in solar panels is actually higher, but investments were already done. The popularity of green roofs is interesting, because this of one of the two first measures the initiative group wanted to share with the neighbourhood.

Figure 3 shows how much importance respondents give to taking sustainable measures. The majority of the respondents, 33 in total, indicate that they think acting more sustainably is important, but they do not know exactly how. This indicates that the participants are very willing to consider options and measures, but are not sure. This is an interesting result for the neighbourhood initiative, because they could decide to play a role in this issue.

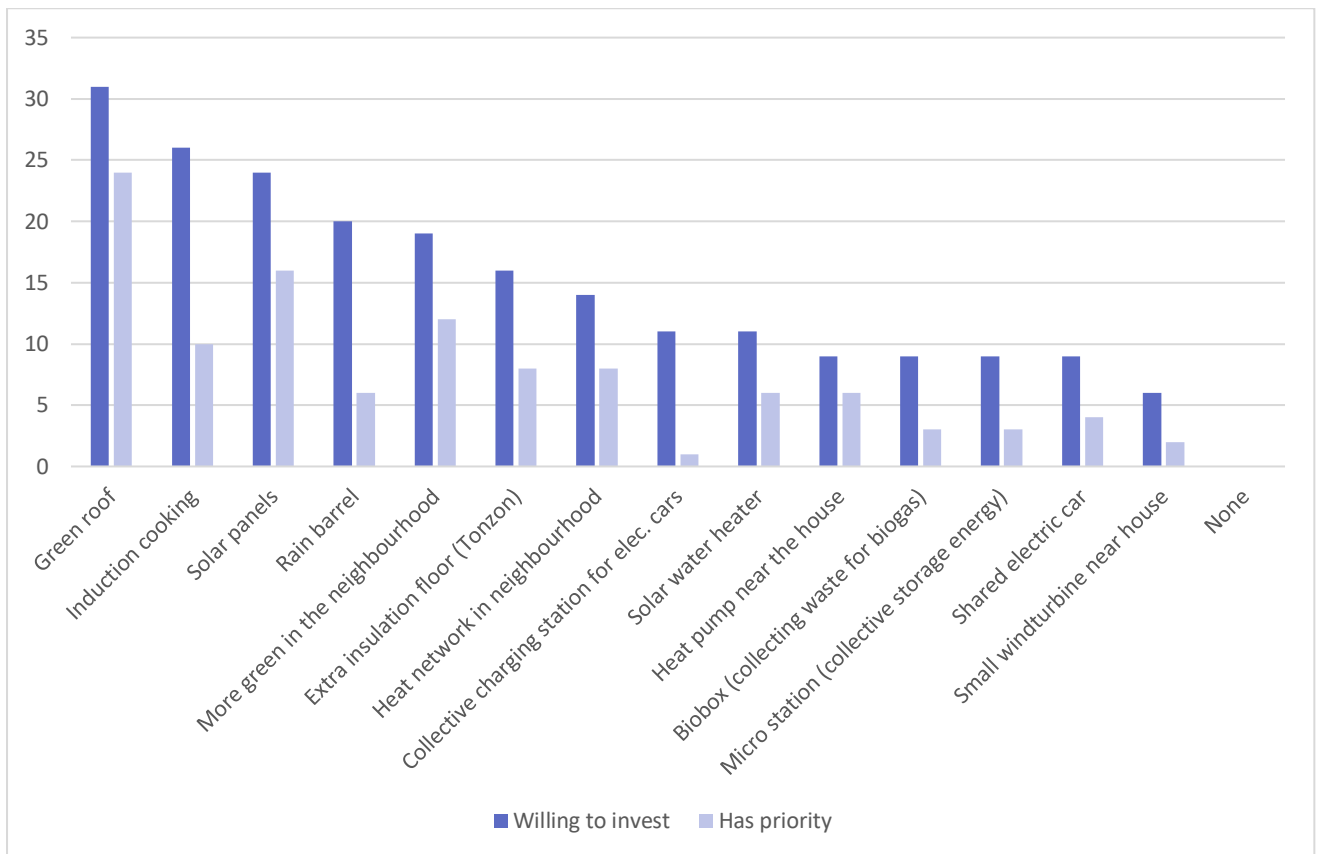


Figure 2: Willingness to invest in specific measures

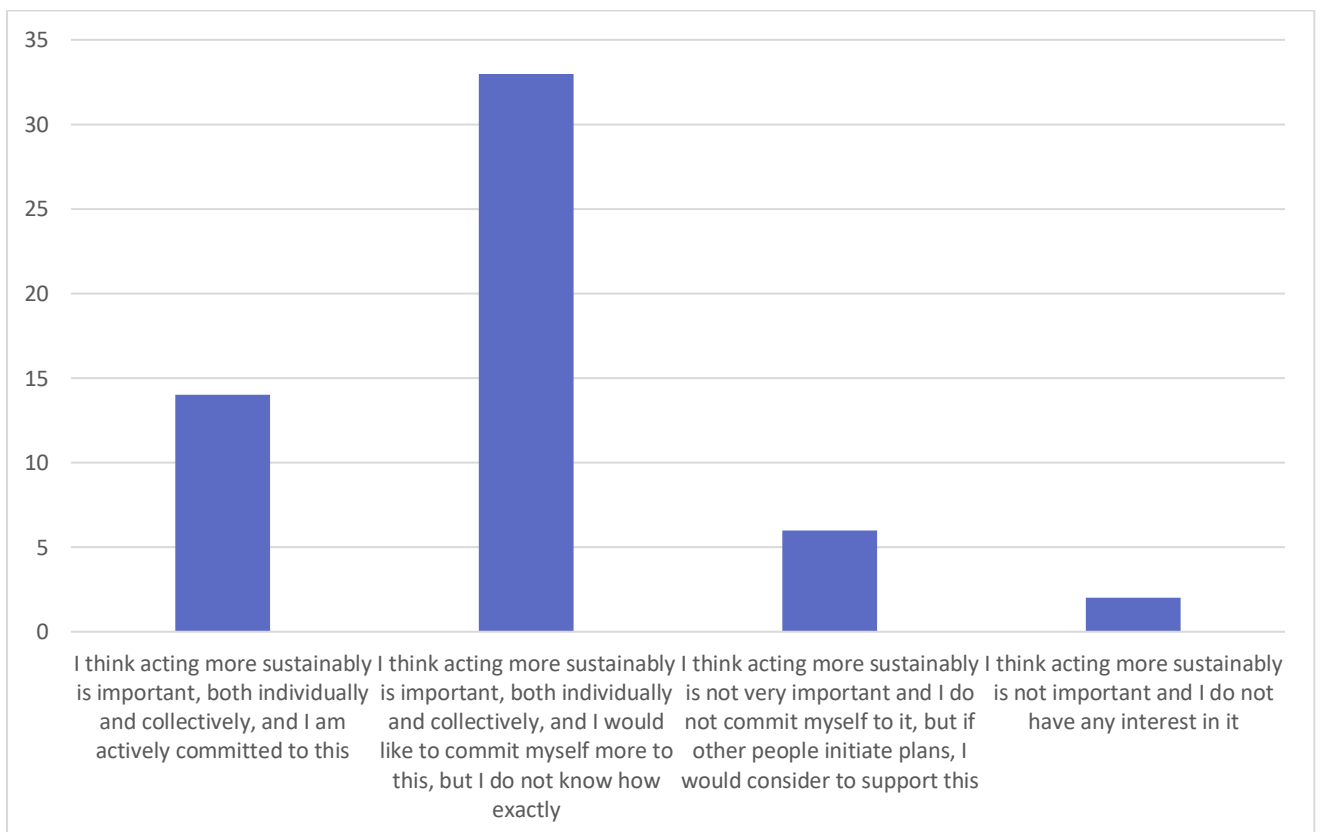


Figure 3: Overview of level of importance given to acting sustainably

Motives

The main motives within the sample are: to save energy, because I worry about the risks of climate change and for the climate (idealism). An overview of tables of these motives can be found in Appendix 6.

Some motives are more concentrated on certain answers, while on other motives the answers are more dispersed. Another result is that 'Because I have worries for (obligatory) policies from the government' is not very important for the participants. This is interesting because the municipality has set goals for households, both for an in-between goal in 2023 and the final goal in 2035. These goals are quite ambitious, one of the goals for example is that 50% of all households have a hybrid heat pump in 2035 (Gemeente Groningen, 2018). This will be done by support and stimulation of the municipality. Still, households are involved and expected to contribute. The municipality created a helpdesk (see Appendix 7) for supporting and stimulating homeowners to take measures (Gemeente Groningen, 2018). They also create Energie Transitie Plannen (ETPs, Energy Transition Plans) for all neighbourhoods, in different phases. For De Meeuwen, the goal currently is to make the switch from natural gas to all-electric (Groningen Aardgasvrij 2035, 2020). However, De Meeuwen is not one of the first 12 neighbourhoods that are renovated and the plans for the neighbourhood are not finished yet.

Even though these participants are active, interested and involved, they do not seem to be motivated by these plans to take action. This can be due to lack of knowledge. The participants indicate that they do not have enough knowledge to decide on which measures they want to take, how and from which company.

A contributor to this lack of motivation from the goal of the municipality can be a lack of trust or miscommunication between citizen and municipality. The municipality has set up various platforms to support citizens, in the form of subsidies, information about different measures and information about how this goal will be implemented, but their plans and information are not coming through. As can be seen in Appendix 7, there are various websites and policy documents. Some are created for citizens, some are not, but still provide useful or even necessary information when investing in sustainable measures. Even though the plan for this neighbourhood is not final, the inhabitants are taking measures. This might turn out fragmented, unnecessary or even counteracting, if not connected to the plans of the municipality. There is a huge potential and willingness within this group, which should be used more effectively.

Qualitative analysis

The qualitative analysis is meant to answer the third sub question, focusing on perspectives on the role of the citizen. The qualitative analysis shows the results per concept used in the process of coding.

Motives

Participants 1, 2 and 3 share their worries for the changing living environment as motivation for acting sustainably. They are directly impacted by these changes and indicate that this is for them an important motive to act more sustainably. The influence of how they will leave the world for their children, is also high. Participants 1, 2 and 3 say that they are concerned about the world, especially about future generations, and their own (grand)children. Another motive to invest in sustainable measures identified is the effect it can have on the surroundings, in the way that it can work as inspiration or stimulation of other citizens. A direct reward, such as the cooling effect of a green roof, is also seen as something that is mentioned as motivation for investing in sustainable measures.

The motivations of the participants impact their perspective on their role in the following way. The motivations for acting sustainable mainly lead to the responsibility of educating oneself on what can be done. Being active and involved seems to be an important role for the participants.

Capability

In order to understand how citizens perceive their role, their level of capability is studied. As can be seen in appendix 1, this includes their barriers, knowledge, abilities and their view on the effectiveness of individual action. This section will give an overview of these, respectively.

The qualitative analysis indicates that there are 2 main barriers for taking action: money and knowledge. This lack of knowledge includes the feeling of not having an overview and not knowing whether something is effective. Interviewee 4 mentions a failed project where there is invested in a certain measure, which turns out to be ineffective a couple of years later, due to better technology. This implies that there is a certain level of certainty needed before investing money.

The participants all indicate that they lack information about a certain topic. Some mention that they lack knowledge about measures, some lack knowledge about the governmental action and all participants do not have a clear overview of the goal of the municipality to be CO₂ neutral in 2035. This will be more elaborated on in the section 'awareness'.

Participants indicate that they all take individual sustainable action. Although the measures the participants are interested in are diverse, they have something in common. All interviewees are active and curious towards sustainable action and take responsibility for the effects of their behaviour. Interviewee 1 and 3 express how they take action by educating students at their job, and inspiring to think for themselves, as mentioned by interviewee 3:

“I think it is important that students are thinking about more than their individual behaviour, for example plastic use or having a vegetarian diet, but also learn something at school about the broader societal perspective.”

They all see the advantages of collective action. These are mainly inspiration for what is possible, and spreading awareness. However, they remain critical on the real effect of individual, citizen action and indicate that the climate crisis will not be solved by (only) this. All share doubts about the influence of citizens against large companies.

Thus, capability impacts the perception on their role in the following manner. There is not one role for all citizens. The focus of the answers from the participants lies in increasing your own awareness and doing what you are able to do. The participants indicate how citizen initiatives can be small, but very effective in raising awareness. They all take individual action and imply that being aware and looking at what you can do, is important. The small steps can inspire others to do the same, or to think further. Participants 1 and 2 share the story of the 'geveltuintjes' (small façade gardens), see figure 4. This appears to be a known phenomenon in the neighbourhood. One household in De Meeuwen requested a 'geveltuintje' at the municipality, they put a sign next to it with short information, and they saw it spread through the neighbourhood. The municipality indicates it is better for the living environment and for the climate in the city, and indeed delivers them for free (Gemeente Groningen, 2020). The advantage of small action is the increased awareness and the 'snowballeffect', as is illustrated by participant 2:

“It started with the façade gardens, one person installs one, the municipality did. Suddenly at the end of the year, the whole street has a façade garden. Well, that is an initiative, beautiful, very small step, but that leads to more.”



Figure 4 – ‘Geveltuinjes’ in De Meeuwen. Groningen, June 10, 2020.

Context

Participants indicate the importance of their social and physical context on sustainable action. The institutional context does not seem to affect them at this moment. What they see around them affects them highly in two ways. Firstly, interviewee 1, 2 and 3 indicate that they see a degrading environment around them, which influences them in their realisation that things should change, as illustrated by interviewee 1:

“I always cycled through the landscape, and thought about how beautiful it was, and then over time, the feeling hit me that it is less and less beautiful.”

Secondly, their social and physical context can stimulate them in thinking about sustainable measures and taking action. When asked about this, the interviewees all mention their context at work and in the neighbourhood, which are apparently their most important contexts. Participant 3 mentions that the education facility in Groningen where they work, has set specific sustainable goals, which impacts them in a positive way. The neighbourhood initiative is also an inspiration for the participants, and they state that they can also play a role in spreading information, as is illustrated by interviewee 2:

“Awesome! If there is a group in the neighbourhood that is busy with sustainability, let them share their knowledge with other people. That works stimulating.”

Next to the visible sustainable action in the neighbourhood, such as solar panels and green roofs, the community can have an impact on sustainable action as well. The participants indicate that they feel that their neighbourhood is open and active. The participants are very positive about

their green and innovative neighbourhood, and are inspired by neighbours. Participants 2 and 4 indicate that they are influenced and inspired by an advisor, who is part of the initiative, in the neighbourhood who organises consultation hours about sustainable measures and also discusses his sustainable ideas with his neighbours. Participant 4 says that this kind of people is very important in making whole neighbourhoods more sustainable, since the neighbourhood takes him seriously and listens to him.

“If [neighbour] says to me, this is a good idea, then I look at it differently than when someone from the municipality, that I do not know, says the same thing.”

Awareness

All participants indicated that they were involved in the world around them, and gave examples of risks and initiatives. How they got involved, and where they get their information, was diverse. The awareness in the group interviewees was high, they were all aware of effects of climate change. Some were also aware of theories and concepts related to this, such as ‘urban heat’ and ‘doughnut economy’. Some interviewees were aware of local sustainable initiatives and other citizen initiatives. Some interviewees were involved in neighbourhood initiatives or local political events.

Their knowledge about the goal of the municipality to be CO₂ neutral in 2035 is lacking. This is worrisome, since they are quite educated about other topics, within and outside sustainability. All participants know about the goal, but do not know anything else, such as consequences for their household or neighbourhood. Their involvement and interest is generally high, thus there seems to be a problem in communication between municipality and citizens.

Role government and organisations

What is mainly mentioned during the interviews, is the facilitating role of the government, specifically the municipality. All interviewees agree that the municipality should be facilitating and coordinating the citizens for taking sustainable action. Participant 1 and 2 explain that this includes facilitating initiative groups, helping them or making it easier for them to take action. Participant 3 points out that this role begins with listening to citizens. Participant 4 shares their idea about a collaboration between municipality and neighbourhood initiatives, to work towards the goals of the municipality.

Respondents 1 and 3 express critiques towards how the municipality deals with participation. They share examples of cases where they did not feel taken seriously, and did not feel included. They mention that many trees are cut in the municipality, even though there have been protests or alternative ideas. One of these examples is the cutting of trees in the city, and specifically, the recent cutting of trees at Zernike Campus, which was mentioned by 2 participants. Both participants have experienced processes where they feel the municipality did not listen enough to the citizens. Participant 3 elaborates on their involvement in a citizen initiative against certain aspects of the plans of the Southern Ringroad:

“You always assume a bit of decency from the municipality, well, in these two situations where I was involved, it was not there.”

Another important role for the government is the restriction of large companies, specifically restriction of polluting and damaging processes. Participant 1 has critique on the slow response on plastic use. Participant 4 argues that companies will only behave more sustainably when they are legally restricted by the government. The trust in the government, that they will take the necessary steps to battle climate change, is low.

From this research, it is clear that the role of the citizen is thus to act collectively. Then the role of the government is to take that seriously and express their care for the citizens. The way the municipality handles unrelated cases, also impacts the way the citizens perceive their municipality, and decreases trust. This research shows how involvement and communication of the municipality towards citizens is important. Because, of course, it might be that these 2 participants do not know the whole story, and were not included in the trees of Zernike, because they do not live there. Still, we can conclude that they feel neglected as citizens by the actions of the municipality.

5. Discussion

Although the participants were generally active in taking sustainable measures, they still identified struggles with taking action. This supports the theory of Lorenzoni et al. (2007), that there is a gap between belief and behaviour. The discussed barriers are similar to the barriers found in this research. The lack of knowledge about sustainable measures is a known barrier (Kollmuss & Agyeman, 2002). This research supports this, and also reveals how the context can contribute to solving this issue. The citizen initiative is perceived as positive and more trustworthy than the municipality. More research should be done about how citizen initiatives can play a role in connecting the goals of (local) government with citizens.

The importance of community and context, which is discussed by Thaler & Seebauer (2019), is also supported by this research. The participants from the qualitative research indicate that they all see benefits of collective action, and feel supported and influenced by their neighbourhood. The conclusion is drawn that the social context can activate environmental behaviour and shape the role of the citizen. As is discussed by Weber (2010), the social and legal norms impact citizens heavily. The participants indicate they are influenced by small-scale energy initiatives in their city and neighbourhood, and can be as small as a free 'geveltuintje'.

The results about the knowledge and capabilities of the inhabitants complies with the results from previous research that was done in commission of the municipality of Groningen (Gemeente Groningen, 2020).

This research is relevant for new insights in how the known factors contribute to how citizens perceive their role in the energy transition, while also studying how the context influences this. Citizen participation and self-governance, in relation to the energy transition, ask a great effort from (local) government and citizens. Thus for planning and governance it is relevant to know how citizens think about this shift and whether they are willing to take action. Although trust was not specifically studied in this research, it is shown that the citizens value the opinion of citizen initiatives like the Energieke Meeuwen and other local, citizen-driven initiatives. Governments can use this to communicate their plans. Governments also appear to have a role in supporting these initiatives. Moreover, for both the neighbourhood initiative and the municipality it is practically relevant to know more about the perspectives on the energy transition in this neighbourhood. Both the neighbourhood initiative and the municipality can work with the identified barriers and adjust their strategies accordingly. In order for municipalities to gain insight into building trust between government and inhabitants, future research can be done to gain insight into how trust is built or destroyed and how this impacts the actions of citizens.

6. Conclusions

Willingness

The results show that the participants feel responsible for their own behaviour, and are willing to invest. The willingness to invest is concentrated on a couple of measures, while other measures are not popular. The most popular measures are green roof, solar panels and induction cooking. Almost all participants have invested already or are planning on investing to make their house more sustainable. The participants of the qualitative study also share their opinion about their green and innovative neighbourhood, which is motivating.

The qualitative study about the barriers for investing money indicated that there is a level of certainty of the measure needed. One of the main barriers identified, is the lack of knowledge. This was also the main barrier mentioned in the questionnaire. This can explain why solar panels and green roofs are very popular. Participants indicate they would like to do more, but do not know exactly how. Some interviewees also discuss their worries about fragmented action and the effectiveness of measures. In a city where there are clear and ambitious plans, there is need for more clarity and cooperation. Participants indicate they expect and sometimes lack coordination. Although not always directly identified, this is mainly the role of the municipality, since they set the goal to be CO₂ neutral and have the resources for this. This is where there is a role for the government. Would the plans for the neighbourhoods be known, then citizens can actively contribute to them, and know that what they are investing in, is effective.

Motives

There are multiple motives identified in this research. The qualitative research shows a more idealistic desire to improve the living area and the environment. While this was also one of the most indicated motives in the quantitative study, more motives appeared to be important there. The motives to take sustainable action are thus dispersed. The participants are not really motivated by the goal of the municipality to be CO₂ neutral in 2035, is concluded from the quantitative study. This is interesting, since the participants are interested and active, but are not fully aware of this goal. The qualitative study supports this lack of knowledge even more. There seems to be a gap between municipality and citizen. Citizen initiatives can play a role in bringing these two parties closer. It seems that citizens are more open to context and community related communication, which thus might reveal a role for citizen initiatives to be in-between the municipality and citizens.

Perspectives on climate change, roles, risks of climate change and barriers

Most participants are aware of the necessity to take action against climate change, and are aware of the local and global risks. They do not assign one role to government, market and citizen. According to the interviewees, the government has an inspiring, facilitating and restricting role. They perceive goals such as the goal to be CO₂ neutral as positive. However, as discussed, this is not their main motivation for investing. The main barriers identified are knowledge and costs (in relation to certainty).

Perspectives on the role of the citizen

The qualitative analysis shows that individual action is important, but not very effective in combating climate change. The influence of individual citizen action can be increased by publicity and media. This can be mainly done, according to the participants, by highlighting

projects and initiatives, to give them more attention and spread awareness and inspiration. Individual action plays a key role by inspiring others. The participants also point out how they are influenced by small initiatives, such as De Energieke Meeuwen. This kind of initiatives mainly helps them to implement things they cannot do on their own or to create awareness and enthusiasm. Thus, small initiatives and individual actions can have a large influence, but citizens cannot solve the climate crisis by taking individual action. The citizens in De Meeuwen need support and information about the various measures. The results indicate that the main role of citizens is being informed about own action and behaviour, taking action if able and spreading awareness and inspiration. Government should facilitate this by spreading information about measures and goals more effectively. Only when understanding all perspectives, successful measures can be taken, especially the large projects the municipality has planned for the neighbourhood. A large support base is needed for these plans.

The role of collective action is considered important in this, for more effectiveness, support, inspiration, stimulation and information. The community of the neighbourhood can play a large part in this. Within a neighbourhood, knowledge can be shared, which is already done in the office hours in the Poortshoes, a neighbourhood centre. Doubts remain about actual results of individual or collective action. The capability and impact of the citizen is perceived low. Large corporations have more power and impact than the citizen. Some participants perceive this as very alarming. The participants say that the media can help in this role of the citizens. Publicity can increase the impact of individual and collective action, by spreading more awareness and ideas to other citizens.

7. Reflection on the research process

The level of willingness in the group of participants in general was high. Almost all participants indicated that they have an interest to take measures. A full overview of the neighbourhood would have been very useful, both for the sake of the citizen initiative and this research. However, it seems that we did not succeed in including less interested inhabitants. The reason for this could be that the letter, including the invitation for the questionnaire, that was spread in the neighbourhood was not neutral enough, but rather quite 'left' or pro-environmental. In order to fully understand all perspectives about taking measures in this neighbourhood, future research can aim mainly on studying less interested people.

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Appendices

Overview

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Appendix 1: Key words used during coding

Key words	Meaning/including
Motivation	Why they act sustainably
Capability	Barriers Knowledge Abilities Individual action
Context	Social and physical context Trust Community
Awareness	Risks of climate change Opinion, point of view
Role of government and organisations	Top-down pressure
Society (added during coding)	Ideas how the world/system should be Idealistic points of view

Appendix 2: Consent form questionnaire (in Dutch)

Appendix 2.1: Introduction of the questionnaire (in Dutch)

Hallo bewoner van De Meeuwen!

Wat leuk dat u mij en het initiatief wilt helpen!

U gaat meedoen aan het onderzoek "Perspectives on sustainable measures in neighbourhood De Meeuwen, Groningen". Dit onderzoek wordt gedaan door van Eike van der Weele van de Rijksuniversiteit Groningen in het kader van haar bachelorproject.

Het doel van dit onderzoek is inzicht te verkrijgen in de bereidheid van buurtbewoners om duurzame maatregelen te treffen in huizen en in de wijk en wat het draagvlak hiervoor is.

Uw deelname aan dit onderzoek is volledig vrijwillig en u kunt elk moment stoppen. Ik vraag in de laatste vraag naar uw huisnummer omdat het buurtinitiatief u later niet onnodig wil benaderen voor maatregelen waar u geen interesse in heeft. Als u de enquête echter alleen anoniem wilt invullen, dan kunt u dat aangeven in de laatste vraag. Daar kunt u ook aangeven of u bereid bent door mij geïnterviewd te worden. De data zal ik, Eike van der Weele, gebruiken en analyseren om conclusies te kunnen trekken voor mijn onderzoek. De data zullen veilig bewaard worden en uiterlijk na 1 jaar vernietigd worden door mij. De analyse van resultaten zal ik opnemen in mijn scriptie en delen met het buurtinitiatief.

Door deze enquête in te vullen en te versturen gaat u ermee akkoord dat uw informatie verstrekt wordt aan mij en dat deze informatie gebruikt zal worden voor mijn onderzoek.

De enquête duurt ongeveer 15 tot 20 minuten, u kunt zien hoe ver u bent aan de balk bovenaan de pagina. U kunt ook terug gaan naar vorige vragen.

Appendix 2.2: Question for consent of sharing address (in Dutch)

Wilt u hier uw huisnummer invullen?

Het huisnummer is voor het buurtinitiatief, dan kunnen zij u gericht benaderen over mogelijke ideeën en plannen die zij hebben.

Als u hier uw huisnummer invult, wordt alleen gedeeld met het buurtinitiatief of u wel/geen interesse heeft in het nemen van maatregelen en zo ja, welke. Op deze wijze kunnen zij u gericht benaderen over bepaalde maatregelen. Verder worden uw antwoorden dus niet gedeeld met het buurtinitiatief, alleen de resultaten van het onderzoek.

Mocht u dit niet willen, en wilt u graag anoniem blijven, dan kunt u hier invullen "Ik blijf anoniem".

Appendix 2.3: Question for consent for sharing of email address for interviews

Wilt u hier uw emailadres invullen?

Voor mijn onderzoek ben ik ook op zoek naar buurtbewoners die ik ongeveer een uur online kan interviewen om dieper op motivaties in te gaan (zie de brief voor meer informatie). Vindt u het goed om hiervoor benaderd te worden? Zo ja, vul dan uw emailadres in.

Uw emailadres zal ik alleen gebruiken om eenmalig contact met u op te nemen over de mogelijke deelname aan een interview. Uw emailadres zal niet gedeeld worden met andere partijen.

Appendix 3: Consent form interviews (in Dutch)

Toestemming interview

Project titel: "Perspectives on sustainable measures in neighbourhood De Meeuwen, Groningen"

Onderzoeker: Eike van der Weele, van de Rijksuniversiteit van Groningen

Doel van het onderzoek: onderzoeken hoe burgers aankijken tegen klimaat actie, en vooral tegen het doel van de gemeente om CO₂ neutraal te zijn in 2035, hun bereidheid en waardoor dit beïnvloed wordt.

Toestemming om deel te nemen aan dit onderzoek

- Ik,, ga er vrijwillig mee akkoord deel te nemen aan dit onderzoek.
- Ik begrijp dat, ook al geef ik nu toestemming, ik op elk gewenst moment kan weigeren een vraag te beantwoorden zonder consequenties.
- Ik begrijp dat ik mijn toestemming om de data van mijn interview te gebruiken op elk gewenst moment kan intrekken, binnen 2 weken na het interview, in dit geval zal de data verwijderd worden.
- Ik heb het doel van het onderzoek uitgelegd gekregen op papier en heb de mogelijkheid gehad hier vragen over te stellen.
- Ik begrijp dat deelname aan dit onderzoek inhoudt dat ik eenmalig wordt geïnterviewd gedurende ongeveer een uur en dat de data hiervan gebruikt zal worden voor dit onderzoek.
- Ik begrijp dat ik niet direct zal profiteren van deelname aan dit onderzoek.
- Ik ga ermee akkoord dat dit interview zal worden opgenomen en getranscribeerd.
- Ik begrijp dat alle informatie die ik geef voor dit onderzoek vertrouwelijk zal worden behandeld, gebruikt en opgeslagen.
- Ik begrijp dat in elk verslag van de resultaten van dit onderzoek mijn identiteit anoniem zal blijven. Dit zal gedaan worden door het veranderen van mijn naam en

het verhullen van elk detail van het interview dat kan onthullen wat mijn identiteit of de identiteit van de mensen die ik noem, is.

- Ik begrijp dat de geanonimiseerde conclusies gebruikt worden in het Bachelor Project van Eike van der Weele.
- Ik begrijp dat, als ik de onderzoeker vertel dat ik of iemand anders het risico loopt op gevaar en de relevante autoriteiten hiervan op de hoogte moet stellen, de onderzoeker dit eerst met mij overlegt maar eventueel genoodzaakt zal zijn het te melden zonder mijn toestemming.
- Ik begrijp dat getekende toestemmingsformulieren en de originele audio-opname bewaard zullen worden op de privé computer van Eike van der Weele, welke is beschermd met een wachtwoord waar alleen zij toegang toe heeft, tot 1 jaar na het interview.
- Ik begrijp dat een transcript van mijn interview waarin alle identiteitsgegevens verwijderd zijn, zal worden bewaard gedurende de tijd van 2 jaar.
- Ik begrijp dat onder de wetgeving van de vrijheid tot informatie, ik bevoegd ben om inzage te krijgen in de informatie die ik gegeven heb op elk moment in de tijdsperiode die hierboven genoemd is.
- Ik begrijp dat ik vrij ben om alle mensen die betrokken zijn in dit onderzoek te benaderen voor duidelijkheid en informatie.

Onderzoeker: Eike van der Weele, student Technische Planologie (Spatial Planning and Design) aan de Rijksuniversiteit Groningen. e.l.van.der.weele@student.rug.nl

Academische begeleider: Ina Horlings. L.g.horlings@rug.nl

	Ik geloof dat de deelnemer geïnformeerde toestemming geeft om deel te nemen aan dit onderzoek
--	---

..... Handtekening deelnemer Handtekening onderzoeker
..... Datum Datum

Appendix 4: Questions questionnaire (in Dutch)

C1: Voor deze enquête ben ik op zoek naar de bereidheid om duurzame maatregelen te nemen in huizen in De Meeuwen. Dit is vooral gefocust op huiseigenaren. Bent u (mede)huiseigenaar in de wijk De Meeuwen?

- Ja
- Nee
- Nee, ik huur een huis in De Meeuwen

Q1: Hoe belangrijk is het thema klimaat voor u?

- Heel belangrijk
- Best belangrijk
- Niet belangrijk

Q2: Hoe belangrijk is duurzaamheid op het gebied van energie voor u?

- Heel belangrijk
- Best belangrijk
- Niet belangrijk

Q3: Heeft u al duurzame maatregelen getroffen sinds u in uw huidige woning woont, of bent u daarmee bezig?

- Ja
- Nee
- Nee, maar dat ben ik wel van plan

Q4: Welke maatregelen heeft u genomen of bent u van plan te nemen?

- Open

Q5: Welke omschrijving past het beste bij u?

- Ik vind het belangrijk om te verduurzamen, zowel persoonlijk als collectief en zet me hier actief voor in.
- Ik vind het belangrijk om te verduurzamen, zowel persoonlijk als collectief, en ik zou hier graag meer mee doen maar ik weet niet goed hoe.
- Ik vind verduurzamen niet heel belangrijk en ik doe er weinig mee, maar als er initiatieven vanuit andere partijen komen, zou ik best willen overwegen dit te steunen.
- Ik vind verduurzamen niet heel belangrijk en heb hier weinig interesse in.

Q6: Bent u op de hoogte van het doel van de gemeente Groningen om in 2035 CO₂-neutraal te zijn?

- Ja
- Nee

Q7: Hoe denkt u dat de wijk het best meer duurzame energie kan produceren? (u kunt hier meerdere opties aanvinken)

- Aardwarmte
- Zonnepanelen
- Windenergie
- Biogas
- Ik heb hier niet genoeg informatie of kennis over
- Anders: open
- Dat hoeft van mij niet

Q8: Bekijk de volgende motieven om duurzame maatregelen te nemen en beoordeel hoe belangrijk deze motieven voor u zijn. Ik neem graag duurzame maatregelen/investeringen, ... (5-puntschaal: Helemaal niet belangrijk, Niet zo belangrijk, Neutraal, Vrij belangrijk, Heel belangrijk)

- Voor het klimaat (uit idealisme)
- Om goedkoper uit te zijn
- Om energiezuinig te zijn
- Om zelfvoorzienend en/of autonoom te zijn
- Om aardbevingen te voorkomen
- Omdat ik zorgen heb over de risico's van klimaatverandering
- Omdat ik zorgen heb over (verplichtende) maatregelen vanuit de overheid en ik wil deze voor zijn
- Omdat ik me wil inzetten om het doel van de gemeente Groningen te halen om in 2035 CO2-neutraal te zijn

Q9: In welke mate maakt u zich zorgen over de volgende risico's van klimaatverandering, lokaal gezien, dus in uw wijk of stad? (5-puntschaal: Helemaal niet, Een beetje, Neutraal, Ik maak me zorgen, Ik maak me erg veel zorgen)

- Hitte
- Droogte
- Extreem weer (plensbuien, stormen, etc.)
- Overstromingen
- Verlies van biodiversiteit

Q10: In welke mate maakt u zich zorgen over de volgende risico's van klimaatverandering in het algemeen? (5-puntschaal: Helemaal niet, Een beetje, Neutraal, Ik maak me zorgen, Ik maak me erg veel zorgen)

- Hitte
- Droogte
- Extreem weer (plensbuien, stormen, etc.)
- Overstromingen
- Verlies van biodiversiteit
- Verzekering oceanen
- Bosbranden

Q11: Ziet u de voordelen van een gezamenlijke aanpak, bijvoorbeeld met buurtbewoners, om duurzame maatregelen te nemen of kiest u voor een individuele aanpak waarbij u zelf de maatregelen realiseert? Denk hierbij aan bijvoorbeeld energiebronnen, vergroening, energieopslag, etc.

- Ik zie de voordelen van een gezamenlijke aanpak
- Ik heb voorkeur voor een individuele aanpak
- Ik heb geen voorkeur

Q12: Duurzame maatregelen nemen ruimte in en beïnvloeden het landschap in de wijk. Mochten er duurzame maatregelen getroffen worden, met welke opties zou u instemmen? Deze vraag gaat alleen om het visuele aspect, niet om financiële of andere aspecten. (U kunt hier meerdere opties aanvinken)

- Parkeerplaatsen opofferen in de wijk
- Een collectieve warmtepomp in het park
- Een collectieve warmtepomp aan de rand van de wijk
- Warmtepomp in of om het huis
- Waterstoftank in of om het huis
- Geen

Q13: Met welke maatregelen bent u bekend? (u kunt hier meerdere opties aanvinken)

- Groen dak
- Warmtenet in de wijk
- Inductie koken
- Warmtepomp bij het huis
- Biobox: het inzamelen van groen afval voor de productie van groenere energie (biogas)
- Kleine windmolen bij het huis
- Extra isolatie van de vloer (Tonzon)
- Zonnepanelen
- Micro wijkcentrale (collectieve opslag van energie)
- Meer groen in de wijk (bijvoorbeeld door steenbreek of aanplanting bomen)
- Collectieve laadpalen voor elektrische auto's
- Elektrische deelauto's
- Waterton
- Zonneboiler
- Geen

Q14: In welke van deze maatregelen bent u bereid te investeren (nu of in de toekomst)? (u kunt hier meerdere opties aanvinken)

- Zelfde opties als vraag 13, maar dan een selectie van de aangevinkte opties

Q15: Welke van de aangevinkte opties van de vorige vraag hebben uw prioriteit (maximaal 3)? Als u geen vakjes heeft aangevinkt bij de vorige vraag, dan kunt u deze overslaan.

- Zelfde opties als vraag 13, maar dan een selectie van de aangevinkte opties

Q16: Van de maatregelen waarin u niet in wilt investeren, waarom niet? (u kunt hier meerdere opties aanvinken)

- Te duur
- Niet effectief genoeg
- Te veel werk
- Ik vind het lelijk of het neemt te veel ruimte in
- Het heeft niet mijn prioriteit op het moment
- Ik wacht eerst af welke maatregelen mensen om mij heen en/of de gemeente nemen
- Ik heb te weinig informatie op dit moment
- Anders: open

Q17: De meeste duurzame maatregelen vragen een behoorlijke investering. Hoe kijkt u hier tegenaan?

- Dit is geen probleem, het is de investering waard, zelfs als ik er geld voor moet lenen
- Dit is geen probleem, het is de investering waard, zolang ik er geen geld voor hoeft te lenen
- Ik weet niet zeker of dit het waard is
- Ik investeer liever niet in duurzame maatregelen

Q18: Een investering in duurzaamheidsmaatregelen kunt u misschien met een lening betalen. Met de huidige lage rente kan het zijn dat wat u maandelijks voor zo'n lening betaalt minder is dan wat u bespaart op de energierekening. Zou u dan bereid zijn om voor die investering een hypotheek af te sluiten op de meerwaarde van uw huis of op een andere manier geld te lenen of te investeren (bijvoorbeeld uit spaargeld)?

- Ja
- Nee
- Weet ik niet

Q19: Als gebruik maken van biogas uit ons eigen groen en huishoudelijk afval of uit slib mogelijk is, heeft u dat dan liever dan helemaal van het gas af gaan?

- Ja
- Nee
- Weet ik niet

Q20: Vraag en aanbod van energie kan ook beter op elkaar afgestemd worden door een 'smart grid' te vormen met de omliggende bedrijven. Dat kan gerealiseerd worden met specifieke software in de wijkcentrale. Bent u voor samenwerking met de omliggende bedrijven op die manier?

- Ja
- Nee

- Weet ik niet

Q21: Zoals het er nu uitziet, gaat de gemeente Groningen in De Meeuwen niet investeren in een warmtenet, waar dat in andere wijken wel gebeurt. Als we dit wel willen, dan zouden we met de Oosterpoortwijk en omliggende bedrijven samen kunnen investeren hierin. Zou u daartoe bereid zijn?

- Ja
- Alleen als de maandelijkse kosten voor energie hierdoor lager of gelijk zijn aan de huidige kosten die ik betaal voor energie, plus de afschrijfkosten van de maatregel
- Nee
- Weet ik niet

Appendix 5: Questions semi-structured interview (in Dutch)

Intro (10 min)

Wat vond u van de enquête?

Wat was uw motivatie om in te stemmen met dit interview?

Zijn er vragen in de enquête waar u graag toelichting over had willen geven? Welke? Miste u iets in de enquête?

Hoe speelt duurzaamheid een rol in uw leven? (werk, persoonlijk, huishouden). Wat betekent duurzaamheid voor u? Waar komt dit vandaan?

Hoe belangrijk is duurzaam handelen? Hoe ver gaat het voor u?

Context (20 min)

1.1 Wat weet u over projecten voor het klimaat of de energietransitie in de wijk of stad?

1.2 Wat weet u over het burgerinitiatief dat actie onderneemt in uw wijk? Bent u bekend met dit soort initiatieven?

1.2.2 Wat vindt u van dit soort initiatieven? Op welke manier kunnen deze bijdragen aan het halen van de klimaatdoelen?

1.3 Wat weet u van het doel van de gemeente Groningen om in 2035 CO₂ neutraal te zijn?

1.3.2 Hoe zal dit uw huishouden beïnvloeden? Wat houdt het bijvoorbeeld in voor de burger?

1.3.3 Wat vindt u van dit doel?

1.4 Wat vindt u dat de gemeente moet doen om ons aan te passen aan klimaatverandering en de wijken van duurzame energie te voorzien? Doen zij genoeg? Hoe kunnen ze verbeteren? En wat kunt/wilt u zelf doen? Wat is de rol van de burger?

1.5 Op welke manier speelt duurzaamheid een rol in uw omgeving? Merkt u veel? Is er veel veranderd de afgelopen 10, 20 jaar?

Bereidheid (10 min)

2.1 Welke duurzame maatregelen of andere klimaat acties neemt u op dit moment of heeft u al ondernomen? Waarom? Motivatie?

2.2 Bent u onderdeel (geweest) van een burgerinitiatief? Zou u onderdeel willen worden van een burger initiatief? Waarom wel/niet?

2.3 U bent in de enquête gevraagd welke van deze maatregelen u in bent geïnteresseerd. Waarom bent u in deze geïnteresseerd? Wat zijn obstakels? Wie of wat zou u kunnen helpen?

2.4 Wie zou het initiatief moeten nemen om de klimaat- en energiedoelen te halen?

2.5 Hoe kunnen volgens u de klimaatdoelen gehaald worden?

2.6 Hoe kunnen ideeën zoals vergroening doorgevoerd worden denkt u?

2.7 Wat is uw mening over het nemen van maatregelen, is dat per individu iets wat we moeten doen? Moet het meer vanuit de overheid gestuurd? Begint het bij bedrijven? Onderwijs?

2.8 Veel ingevuld dat u niet genoeg informatie hierover heeft. Waarom? Heeft u interesse in deze informatie of is dat een rol voor gemeente, bedrijven, andere mensen? Zou u informatie hierover willen? Bijvoorbeeld vanuit initiatief.

Risico's (10 min)

3.1 Welke risico's verwacht u van klimaatverandering (globaal, landelijk of lokaal. Ook kunt u denken aan risico's als nieuwe wetten, regels en restricties vanuit de overheid)? Welke maakt u zich het meeste zorgen over?

3.1.2 Wat voelt u hierbij? (machteloos, boos, bezorgd)

3.2 Welke risico's verwacht u in Groningen? Maakt u zich daar zorgen over?

3.3 Hoe beïnvloeden deze risico's u en uw bereidheid maatregelen te nemen?

3.3.2 Hoe zou uw bereidheid veranderen als de risico's hoger worden?

Kracht van de burger (5 min)

4.1 Denkt u dat u invloed kunt hebben op de klimaatcrisis door maatregelen te nemen aan uw huis? Waarom?

4.1.2 Denkt u dat u inspraak heeft op beslissingen van gemeente? Heeft u wel eens contact gehad met gemeente?

4.2 Hoe zou deze impact vergroot kunnen worden? Wat heeft u hiervoor nodig, van wie?

4.3 Voelt u zich een belangrijk onderdeel van de klimaattransitie?

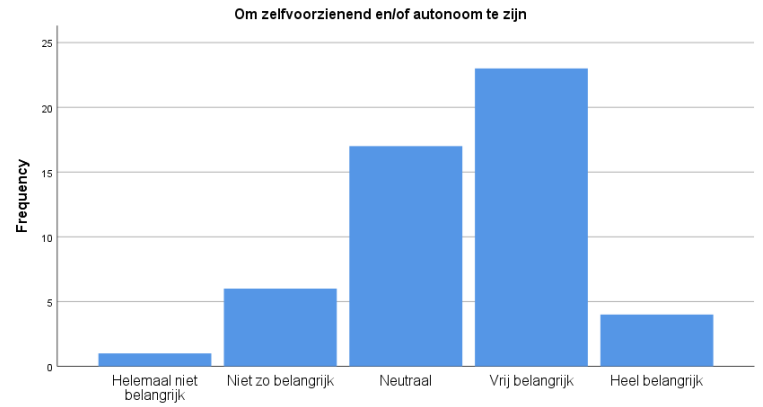
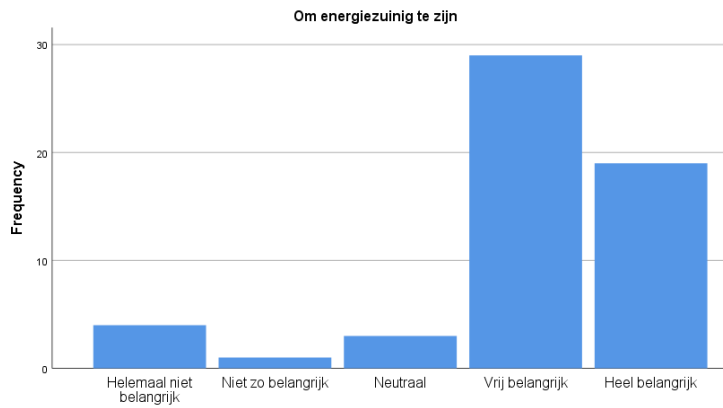
4.4 Op welke manier kunt u bijdragen? Wat wilt u graag bereiken?

4.5 Hoe zou de gemeente u aan kunnen spreken om duurzame maatregelen te nemen?

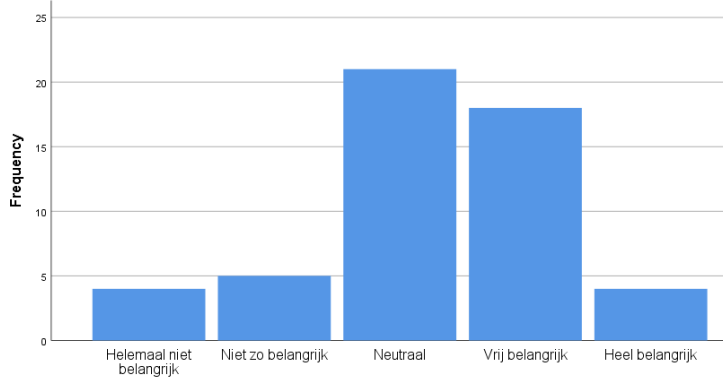
Afsluiting

Heeft u nog vragen of dingen die u kwijt wilt?

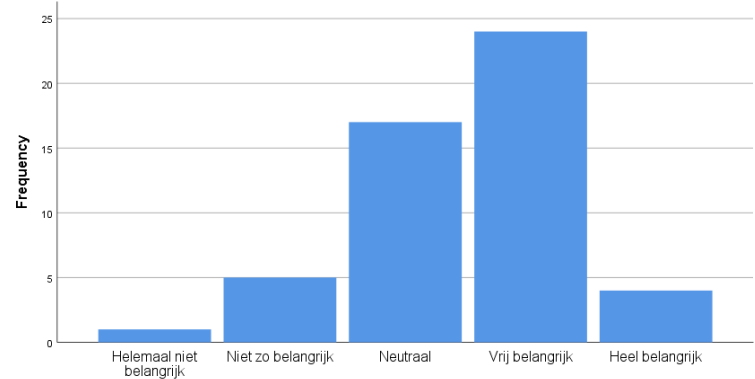
Appendix 6: Overview of motives



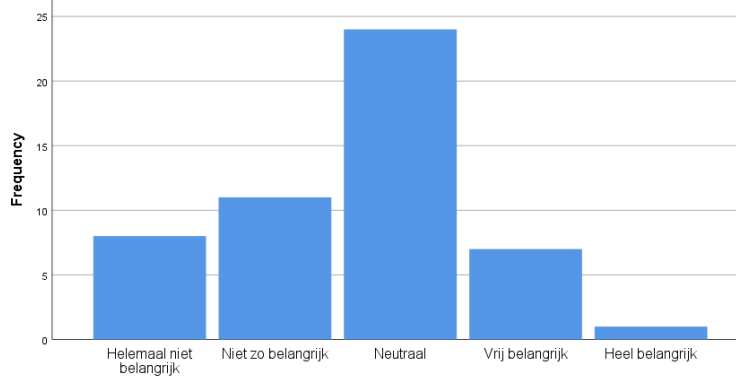
Omdat ik me wil inzetten om het doel van de gemeente Groningen te halen om in 2035 CO2-neutraal te zijn



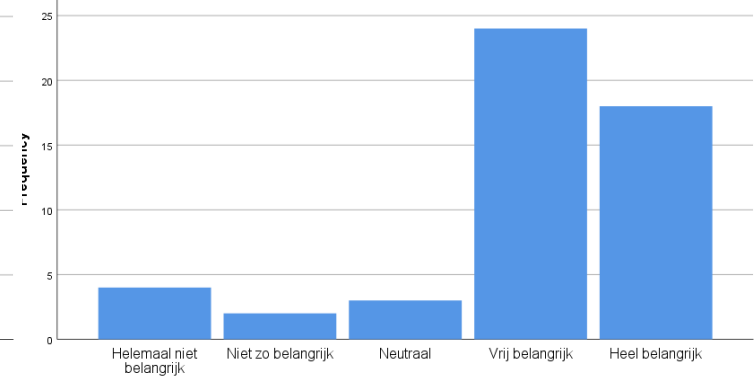
Om goedkoper uit te zijn



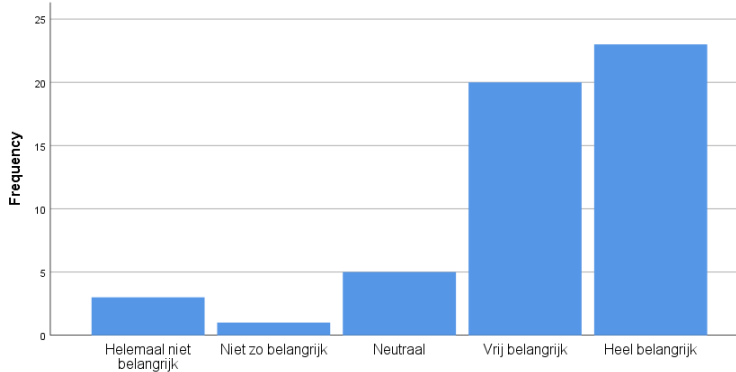
Omdat ik zorgen heb over (verplichtende) maatregelen vanuit de overheid en wil deze voor zijn



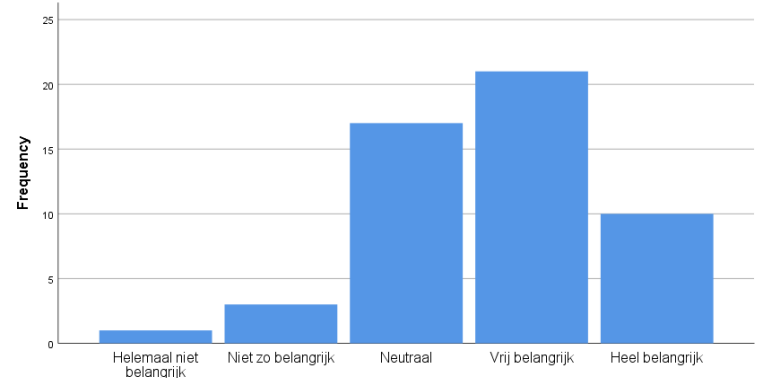
Omdat ik zorgen heb over de risico's van klimaatverandering



Voor het klimaat (uit idealisme)



Om aardbevingen te voorkomen



Appendix 7: Overview of various energy transition related media of municipality of Groningen

Wijk energie plannen (neighbourhood energy plans)	https://gemeente.groningen.nl/wijkenergieplannen
Stap voor stap naar aardgasvrije wijken en dorpen (PDF) (Step by step to natural gas free neighbourhoods and villages)	https://gemeente.groningen.nl/sites/default/files/Strategie-en-aanpak-stap-voor-stap-naar-aardgasvrije-wijken-en-dorpen.pdf
Groningen CO ₂ neutraal (Groningen CO ₂ neutral)	https://www.groningenco2neutraal.nl/
Groningen geeft energie (Groningen gives energy)	https://gemeente.groningen.nl/groningen-geeft-energie#platform-groningen-energieneutraal
Groningen Klimaatbestendig (Groningen climate ready)	https://gemeente.groningen.nl/groningen-klimaatbestendig
Routekaart Groningen CO ₂ neutraal in 2035 (PDF) (Strategy Groningen CO ₂ neutral in 2035)	https://gemeente.groningen.nl/sites/default/files/Routekaart-Groningen-Energie-%28CO2---neutraal%29.pdf
Groningen Woont SLIM helpdesk (Groningen Lives SMART)	https://www.energieloket-groningen.nl/#