Exploring the Success Factors of Renewable Energy Communities: A Social-Psychological Perspective

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Abstract

This research investigates the social factors influencing residents' motivation to join a local energy cooperative, a topic that still remains rather underexplored in existing literature. In a qualitative interview study, 26 participants were exposed to questions relating to social factors based on a comprehensive theoretical framework constructed for this study. The analysis revealed several key motivators: a strong sense of community belonging, social responsibility, and the influential roles of opinion leaders and change agents. Additionally, the study found that small-scale meetings were more effective than larger gatherings in fostering engagement, and leveraging existing social networks and trust. These findings suggest that social factors have an influence on citizens' motivation to participate in local renewable energy initiatives. However, further research is necessary to fully understand these dynamics and to identify all critical elements that drive participation in such community-based projects. This study contributes to the understanding of social motivators in renewable energy communities, providing insights for enhancing community engagement and project effectiveness.

Exploring the Success Factors of Renewable Energy Communities: A Social-Psychological Perspective

One crucial factor in reducing the threat of global climate change is the transition from traditional energy sources to renewable energies (Djinev & Pearce, 2024). Several countries are striving to meet global climate goals by shifting to cleaner energy sources. For example, in the Netherlands in 2019, 85% of the energy used for heating spaces and tap water came from natural gas, contributing 13% to the country's greenhouse gas emissions. Consequently, the Dutch government has set a goal to phase out natural gas and achieve a carbon-neutral economy by 2050 (Kaandorp et al., 2024). Achieving these goals and implementing renewable energies requires active consumer participation (Teladia & van der Windt, 2024). The European Union has recognised renewable energy communities as significant contributors to the energy transition (Teladia & van der Windt, 2024). These community initiatives advocate the use of renewable energy sources and facilitate citizen involvement in reshaping energy systems (Viardot, 2013). Research has shown several benefits of involving citizens in the energy transition, including improved decision-making processes, higher acceptance and adoption of renewable energy projects, positive behavioural changes, and increased investment in community-led initiatives (Teladia & van der Windt, 2022).

Statistics indicate that 61% of European citizens would be interested in participating in a renewable energy community if one would be available in their area (European Climate Foundation, 2021). However, the actual number of participants in renewable energy communities remains relatively small. The estimated number of participants in renewable energy communities in the Netherlands is 131,000 people, representing approximately 0.75% of the country's population (Lokale Energie Monitor 2023; Netherlands Population - Worldometer, 2024). These statistics suggest the potential for increasing participation in renewable energy communities, as citizens are generally interested in joining such initiatives (Guetlein & Schleich, 2023). Thus, a key question arises: "What factors motivate citizens to participate in renewable energy communities?" Past studies considered that question already and researched, among other factors, the financial factors of renewable energy communities, including funding that might influence motivation to participate (Teladia & van der Windt, 2024; Wierling et al., 2018). Additionally, studies have explored individual characteristics related to the intention to join renewable energy communities and invest in renewable energies. Even though academics were eager to gain a better understanding of the factors that motivate citizens to join, social influences have not been fully explored yet (Oliveira et al., 2023; Viardot, 2013). Shortall et al. (2022), also emphasise the need to develop a clearer and

more comprehensive understanding of how social factors influence energy initiatives in order to determine strategies that lead to the long-term success of these initiatives. Thus, expanding the understanding of what motivates citizens to participate, including examining factors from a social-psychological perspective, is crucial. Social psychological theories provide valuable insights into human behaviour, particularly how social norms, peer influence, and community dynamics shape individual actions.

Theoretical Framework

To address the research question, "What (social) factors motivate citizens to participate in renewable energy communities?", Rogers' Diffusion of Innovation Theory (Rogers, 2003) might be important to consider because it provides a comprehensive framework for examining how new ideas and technologies spread and are adopted within a community. By categorising adopters and highlighting the roles of opinion leaders and social networks, this theory helps identify the key influences and stages that drive engagement, from initial awareness to long-term commitment. This theory can be particularly useful to understand how a new innovation like renewable energy communities is adopted by citizens, allowing for the development of targeted strategies to effectively promote and sustain participation in these initiatives. Diffusion of Innovation Theory clusters adopters into five categories based on their readiness and willingness. These groups are called innovators, early adopters, early majority, late majority and laggards. First, the innovators are eager to try new things and more risk-taking. Usually, they have the financial resources and a supportive social network. Next, the early adopters are respected opinion leaders who take on innovations early but more carefully. Their adoption helps to trigger the acceptance by the broader population. Following, the early majority are deliberate and need more evidence before participating. They adopt just before the average person and help provide the critical mass needed for the innovation to become mainstream. Individuals in the late majority are more sceptical and cautious, taking on new ideas only after most of the society has accepted them. They often require peer pressure or economic necessity to be convinced of the benefits. Lastly, the laggards are traditional and resistant to change, often adopting innovations out of necessity rather than choice. They tend to be the last to participate as the innovation becomes standard practice (Rogers, 2003).

To make the categories suitable for this research context, adjustments have been made and the following categories will be used in this thesis: initiators, early adopters, followers and non-participants. The first category, namely the initiators is comprised of individuals who

take the lead in promoting and implementing renewable energy projects within their community. They are often the driving force behind new initiatives and play a critical role in mobilising others. Next, the early adopters category consists of participants who quickly embrace new technologies and initiatives once they are introduced. They are among the first to support and adopt renewable energy projects initiated by others. Furthermore, the followers are citizens who adopt renewable energy practices after observing the success and acceptance of these initiatives within their community. They tend to wait until they see proven benefits and widespread support before participating. Lastly, the non-participants category includes people who have not engaged in renewable energy initiatives. This category includes those who are aware of these projects but choose not to participate.

In addition to the categories, Rogers also identified five stages of the adoption process that individuals go through when deciding to adopt a new idea, behaviour, or technology. These stages help explain how innovations are communicated and spread through various channels over time among the members of a social system. The first stage, the knowledge stage, occurs when an individual becomes aware of an innovation and gains some understanding of how it functions. In the persuasion stage, the individual forms a favourable or unfavourable attitude towards the innovation by seeking more information and evaluating its potential benefits and drawbacks. During the decision stage, the individual engages in activities that lead to a choice to adopt or reject the innovation. If the decision is to adopt, the implementation stage follows, where the innovation is put into use, often requiring adjustments to fit the adopter's needs. Finally, in the confirmation stage, the individual seeks reinforcement for the decision made, evaluating the results of the innovation's implementation to decide whether to continue using it (Rogers, 2003). To address the research question, an adaption of Roger's theory is used and the theoretical framework is integrated into it. Thus, various social-psychological theories are integrated into different stages of community involvement that participants might go through. These stages are created based on Rogers' Five Stages of the adoption process. The aim of creating stages within this theoretical framework is to achieve a comprehensive understanding of the motivational factors influencing participation, from initial awareness to sustained engagement.

Pre-Membership Stage: Awareness and Initial Influence

This stage is based on the Knowledge stage of Rogers' theory, in which individuals become aware of the existence of an innovation such as renewable energy communities and start to learn about its functions. Rogers found that opinion leaders and change agents within a

group play a crucial role in spreading innovation within a community through their social networks by shifting initial awareness and providing the necessary information to spark interest. Opinion leaders influence others' attitudes and behaviours through their social networks, while change agents actively promote innovation, often providing information and support to encourage adoption (Rogers 2003). Thus, these leaders play a crucial role in spreading awareness and providing the initial information that sparks interest in individuals in the pre-membership stage. Awareness of renewable energy communities may begin with exposure to influential figures and early adopters within the community, who showcase the benefits and feasibility of these initiatives.

Rogers (2003) explains that this awareness often begins with exposure to information through their existing social networks. Therefore, the social-psychological concept of Sense of Community might play a significant role in the pre-membership stage, before individuals become members of a renewable energy community. McMillan and Chavis (1986) propose the following definition for the Sense of Community: "Sense of Community is a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to being together" A pre-existing Sense of Community — stemming from social structures like sports clubs, tight-knit neighbourhoods, or village councils — might spread initial awareness and motivate individuals to consider joining renewable energy initiatives introduced within that existing community. Thus, energy communities could draw upon an existing Sense of Community and make use of it to promote their initiative within those existing groups. Consequently, when people already feel a sense of belonging and mutual commitment within their local communities, they might be more likely to join sustainability efforts within their community.

Decision Stage: Evaluating and Committing

This stage is based on the persuasion and the decision stage of Rogers. As individuals move from awareness about the initiative to information gathering and decision-making, they evaluate the personal and social factors that motivate their participation. Social Cognitive Theory and the concept of Collective Efficacy might become relevant in this stage. Bandura's Social Cognitive Theory explains that individuals acquire knowledge and skills by observing others who engage in these behaviours (Tajfel & Turner,1979; Turner, 1987 as cited by Kwasnicka et al., 2016). In the context of the current research circled around renewable neighbourhood initiatives, residents might observe their neighbours' involvement in the

community initiative and adoption of innovative technologies for their homes. This observance could have a compelling influence on others within the neighbourhood, motivating them to participate as well. Thus, people learn about the benefits and practicality of joining the community by observing their peers.

Another concept that holds relevance in the context of motivational factors for joining a renewable energy neighbourhood initiative, is the concept of Collective Efficacy posited by Bandura. Collective Efficacy can be defined as shared beliefs in citizens' collective abilities to organise and undertake communal tasks. Several studies in the past years have shown the importance of Collective Efficacy in achieving common goals (Bandura, 1997, 2000 as cited in Thaker et al., 2019). Research across various contexts such as educational systems, athletic teams, business organisations, and political systems (Thaker et al., 2019) consistently demonstrates that individuals within groups with high levels of Collective Efficacy are more inclined to establish ambitious objectives, effectively in mobilising resources and coordinating actions, and resilient when facing challenges (Bandura, 2000 as cited in Thaker et al., 2019). Research conducted by Thaker et al. (2019) revealed a noteworthy correlation between heightened levels of Collective Efficacy and residents' support for government climate change-related water conservation policies and residents' protest participation. Thus, participants exhibited stronger support for sustainable measures when Collective Efficacy was higher. Based on the consistent findings, and especially the research results of Thaker et al. (2019), indicating that Collective Efficacy has an impact on residents' support of pro-environmental policies, Banduras' concept of Collective Efficacy seems important for this research context. Thus, Collective Efficacy strengthens the belief in the group's collective ability to meet goals, which strengthens individuals' motivation to participate. All in all, it can be said that observing peers and developing a shared belief in collective success might encourage individuals to commit to joining the renewable energy community.

Initial Participation: Sense of Belonging and Community Formation

After joining a community initiative, new members enter the initial participation stage, which is based on Rogers' implementation stage is when the innovation is put into use. Individuals start to interact with other members and form connections. The earlier described Psychological Sense of Community Theory (Sarason, 1974) might play a role again at this stage. The theory explains that a Sense of Community — a feeling of belonging, being valued, and having one's needs met through group membership — significantly influences social participation. Earlier, it was described how energy initiatives could make use of

existing social structures to promote their initiatives within these groups. In addition, a sense of belonging might also arise within a newly formed group of interested individuals. As new members start interacting with the community, they begin to experience feelings of connection and value within the group.

The initial participation stage involves establishing personal connections and shared experiences among members. This fosters a sense of belonging and community ties, which are essential for sustained participation. The theory suggests that feeling connected to and valued by the community (Sarason, 1974; Talò, 2018) reinforces members' commitment to the group. In the context of energy community initiatives, developing these personal connections and community bonds may enhance new members' satisfaction with their decision to join and deepen their engagement with the community's goals. Thus, the development of a sense of belonging and community bonds reinforces new members' commitment and satisfaction with their decision to join.

Identity Formation: Social Identity and Group Norms

This stage, which is based on the confirmation stage of Rogers' theory, may be reinforcement for their decision by becoming more integrated within the initiative. Members may start to form a Social Identity associated with the community. This stage involves the internalisation of group norms and values, which influence members' behaviour and commitment. Social Identity Theory by Tajfel and Turner (1979) as cited in Dang et al. (2022) explains that individuals derive their social identities from group memberships that are important for their self-concept. Moreover, findings from a study by Lede et al. (2019) revealed that increased salience of social identity prompts individuals to cognitively portray themselves and self-stereotype as members of the ingroup, leading them to assimilate into group norms subsequently. Social Identity Theory has been used to analyse environmental activism and engagement in sustainable actions. For example, Schulte et al. (2020) demonstrated a strong theoretical link between an individual's identification with a pro-environmental group and their intention to participate in collective pro-environmental actions organised by the group. Likewise, Agyeiwaah et al. (2023) highlighted the positive impact of social identity on sustainable behaviours, noting that group engagement enhances satisfaction and positively influences future intentions. As neighbourhoods are often seen as a social community that contributes to an individual's sense of identity (Fu, 2019; Hays, 2015), residents within them may establish collective norms for their neighbourhood. Thus, Social Identity Theory might explain how individuals' identification with the group leads to a

stronger commitment to the community's goals and a willingness to adopt and promote its sustainable practices.

Sustained Participation: Long-Term Commitment and Influence

Finally, the sustained participation stage can be seen as a continuation of Rogers' confirmation stage. Long-term members, having confirmed their commitment, might take on advocacy roles, promoting the community's initiatives and influencing new members. The Diffusion of Innovation Theory mentioned earlier comes full circle here, as long-term members might become the new opinion leaders and change agents, recruiting new members and advertising the community initiative.

Reviewing the selected theories rooted in social psychology, it can be noted that social psychological constructs may provide additional understanding of the drivers and motivational factors influencing participation in community sustainability initiatives. It becomes evident that various social psychological constructs — such as opinion leadership, change agency, Sense of Community, Social Cognitive Theory, and Collective Efficacy — might provide additional insights into the drivers and motivational factors influencing participation in community sustainability initiatives. In the Pre-Membership Stage, the concepts of opinion leadership, change agency, and Sense of Community may play a crucial role in spreading awareness and sparking initial interest. In the Decision Stage, Social Cognitive Theory and Collective Efficacy potentially help to explain how individuals evaluate and commit to participating by observing others and believing in the group's ability to achieve common goals. During the Initial Participation Stage, the development of a Sense of Community may foster personal connections and a sense of belonging, which reinforce members' commitment. In the Identity Formation Stage, Social Identity Theory can help to illustrate how members internalise group norms, leading to stronger commitment and engagement. Finally, in the Sustained Participation Stage, long-term members may become new opinion leaders, using their social influence to advocate for the community's goals and recruit new members.

To date, there is little research exploring social factors that foster participation in comparable initiatives. Thus, this thesis aims to explore the social-psychological factors that motivate or discourage citizens from participating in renewable energy communities. The current research will delve into the underlying, social reasons behind citizen participation in their neighbourhood initiatives. By identifying these motivating factors, understanding how to expand participation in renewable energy communities can be improved, which is crucial for

advancing the energy transition and achieving global climate goals. This study will not only contribute to academic knowledge but also provide practical insights for community leaders of energy community initiatives. These insights can be translated into strategies to foster greater citizen engagement in renewable energy projects, ultimately aiding in the global effort to combat climate change.

Methods

Research Context

The current research is conducted in collaboration with LochemEnergie. LochemEnergie is a privately initiated organisation in the Netherlands dedicated to introducing renewable energies and making them accessible to the public (Hoppe et al., 2015). The organisation aims to reduce overall CO2 emissions and create a more sustainable environment for future generations. LochemEnergie's successes include constructing solar parks, sustainable energy landscape projects, and collaborations with established players and stakeholders in the energy sector (Hoppe et al., 2015). In 2023, LochemEnergie introduced the neighbourhood approach, which includes 20 neighbourhoods, or over 300 households, supported in collective actions related to the energy transition at home and in their surroundings. The goal of this approach is to distribute renewable energy sources and promote sustainable behaviour patterns among private households. LochemEnergie supports neighbourhoods at different stages, from experienced groups to those newly introduced to the approach.

Participants and Design

For this exploratory, qualitative interview study, 26 participants were recruited through convenience sampling and snowball sampling. A representative from LochemEnergie assisted in identifying suitable participants from all four categories for the interview study and provided contact information. As mentioned earlier, participants were categorised into four groups based on Rogers' (2003) Diffusion of Innovation theory. These groups are called innovators, early adopters, followers and non-participants. By categorising participants into four groups, the aim was to explore differences in motivational factors, overall motivation, and perceived burdens among the participants.

Given the nature of the interview study with only one interviewer available, the goal was to recruit at least five participants per category. Invitations were sent after the representative of LochemEnergie provided a list of suitable participants for the first two

categories. Participants for the third category were identified through recommendations from those in the first two categories. For the fourth category, two representatives from LochemEnergie provided contact details. An announcement in the LochemEnergie newsletter also invited people from all categories to reach out to the researcher. Out of the 26 conducted interviews, only 19 interviews were suitable for further transcription and analysis. The remaining interviews were excluded due to language barriers or inaudible content. The final sample comprised eight initiators, two early adopters, six followers, and three non-participants. The interviewees' ages ranged from 28 to 86, with a mean age of around 60 years, thus the majority being older adults. The participants were all Dutch citizens residing in the Lochem area. Furthermore, the group of interviewees consisted of eight females and eleven males. Six of the participants had international experiences, having lived or studied abroad in countries such as the USA, UK or even foreign countries like Oman or locations in Southeast Asia and South America. Many interviewees had a technical background or their work related to sustainability and renewable energy. Examples include a chemistry teacher who educates students about environmental issues. Another person is employed as a national electricity transmission system operator, responsible for offshore wind energy projects. Still, another interviewee works as a sustainable finance officer at the Dutch central bank. Thus, many participants had previous involvement in sustainability through their education or professional careers. Demographics and characteristics of the interviewees' neighbourhood can be found in Table 1 in Appendix A, which depicts an overview of the interviewee profiles.

Procedure

The study received ethical approval from the BMS ethics committee of the University of Twente. After participants received the invitation and agreed to take part in the study, no prior preparation was required from them. Participants were primarily invited via email, with some contacted through WhatsApp or telephone or they reacted to the announcement in the LochemEnergie newsletter. The written invitations included a brief introduction of the researcher, the nature of the research and information and organisational matters regarding the interview. Interviewees could choose to conduct the interview in person at a location of their choice, typically their home or the LochemEnergie office, or opt for an online interview via an online meeting platform or a phone call. The duration of the interviews was between around 30 to 60 minutes.

Before the interviews began, participants were thoroughly informed about the interview procedure and the purpose of the research. They were then asked for oral consent to proceed with the interview, ensuring they fully understood and agreed to participate. This oral consent included confirming their understanding that participation was entirely voluntary and that they could withdraw from the study at any time without providing a reason. Additionally, participants were explicitly asked for permission to audio record the interview, with assurances that the recordings would be used solely for research purposes and handled confidentially. For the interview, a semi-structured interview scheme was utilised. One scheme was prepared for initiators, early adopters and followers (Appendix B) and based on that, the scheme was adopted for the non-participants (Appendix C). The semi-structured approach of the interview ensures comprehensive coverage and generalisability among the participants while allowing flexibility, natural conversation and participants sharing their experiences. Most communication before, during, and after the interview was conducted in English. However, Dutch or German was occasionally used when participants were more comfortable expressing certain terms in those languages.

The semi-structured interview scheme was developed based on the theoretical framework and prior psychological knowledge to explore the social-psychological factors motivating citizen participation in renewable energy communities. The interview starts with an introduction to build rapport and explain the study's purpose. Participants then were asked to provide demographic information for context. Next, the interview delves into participants' Sense of Community, focusing on understanding how social dynamics, such as relationships between neighbours, collective activities, and the feeling of belonging, influence their participation in renewable energy initiatives. Questions in this section were designed to explore the extent to which participants feel connected to their neighbours, the level of support within the community, and how these factors contribute to their involvement in the LochemEnergie neighbourhood approach. An example question for testing participants' Sense of Community is the following "How would you describe the level of support among neighbours in your neighbourhood?" The interview scheme also explored how participants learned about and engaged with LochemEnergie, their motivations, expectations, and efforts to motivate others. Social Cognitive Theory was incorporated to explore how community role models influence residents' sustainable behaviours. For example, participants were asked, "Are there individuals in the community who are considered role models for sustainable living, and how might their behaviour impact others?" Following this, Social Identity Theory was applied to understand how a shared neighbourhood identity fosters collaboration. To

delve into this, participants were asked, "How does being a part of your neighbourhood influence how people work together on projects like LochemEnergie's neighbourhood initiatives?" Additionally, the interview assesses norms and peer influence on sustainable behaviours, exploring attitudes towards green energy and examples of sustainable practices such as this example question "What are your neighbours' attitudes towards green energies and sustainable behaviours?". Finally, the interview scheme seeks insights on barriers to participation, challenges faced, and suggestions for improvement for example "Based on your experience, what recommendations do you have for improving or expanding the neighbourhood approach?". At the end of the interview, participants had the chance to share additional thoughts and they were thanked for their participation.

Data analysis

Various transcription tools, including the dictation function of Word, the transcribing tool from Teams, and the software Otter.ai and TurboScribe.ai, were used to transcribe all the audio recordings. Consistency of transcript quality was ensured by manual reviews of each transcript while listening to the recordings. While listening to the recording, necessary adjustments were made, or sections were marked inaudible if the sound had bad quality. The reason for using multiple transcription tools was the lack of access to paid versions of transcription services and the fact that not all interviews were conducted via Teams. To maintain participant anonymity, the names of the participants were replaced with pseudonyms and filler words and expressions such as "uhm" were removed.

The transcripts were analysed using the qualitative data analysis software Atlas.ti 9. A thematic analysis was performed to identify, analyse, and describe patterns (themes) across the qualitative data (Boyatzis, 1998). In thematic analysis, a theme is a pattern that captures something significant about the data concerning the research question. It reflects a level of response pattern or meaning within the data, offering insights and interpretations that contribute to understanding the phenomenon of interest. Themes are characterised by their relevance, richness, distinctiveness, and interpretive power. A theoretically informed approach was performed as a theoretical framework was constructed before data analysis. This framework also helped to phrase the interview questions to explore specific predefined themes. During data collection and initial coding, I focused on identifying patterns that aligned with these theoretical concepts. This form of thematic analysis tends to provide a detailed analysis of some aspects of the data (Braun & Clarke, 2006). This is why I also tried to maintain a level of inductive openness throughout the coding process. An inductive

approach means the themes identified are strongly linked to the collected data (Patton, 1990). I tried to remain open to new and unexpected insights that emerged from the data, in order to capture significant themes that were not anticipated by my theoretical framework. With this dual approach, I aimed to ensure that my analysis was grounded in theory while still being responsive to the actual collected data. Additionally, an approach at the latent level was picked in order to identify and interpret underlying ideas, meanings, and patterns in the qualitative data that are not immediately obvious (Braun & Clarke, 2006).

The method outlined by Braun and Clarke (2006) and their six steps was utilised to analyse the data. To begin with, the transcripts were reviewed to establish familiarity with the content. Subsequently, data extracts concerning participants' responses that were of relevance to the research question were identified. The units of analysis ranged from short sentences to elaborate explanations. These units were labelled with codes that captured the essence of the extracts. One unit of analysis could be relevant to multiple codes rather than being assigned to mutually exclusive codes. After organising the codes into preliminary themes based on their core meanings, I reviewed the data again. While rereading the transcripts, I re-named both the codes and themes until they accurately represented the patterns in the dataset. Finally, I named the themes to reflect the core patterns found in the data. Throughout the analysis, I tried to maintain a reflexive position, acknowledging, and trying to minimise any potential biases that could influence interpretation. Atlas.ti 9 facilitated efficient data management, allowing for systematic organisation and retrieval of coded segments across interviews.

Results

Following the data analysis of the interview transcripts, four prominent themes emerged: Prior Experience; Neighbourhood Dynamics; Motivational Factors and Barriers; and Community Engagement, Belonging, and Learning. While these themes do not directly correspond to the stages outlined in my theoretical framework, they are nonetheless interconnected and reflective of the patterns identified throughout the research process. The difference between the pre-defined stages and the observed themes is a result of the dual approach, explained earlier, which ensures that my analysis was grounded in theory while still being open to new insights. Thus, the theoretical framework guided the analysis by providing a lens through which to examine the participants' experiences and insights. Although the themes differ from the stages, they reveal underlying social dynamics and motivational aspects that influence participation in community sustainability initiatives. The identified

themes, the corresponding codes with a definition, an example, and the frequency are displayed in the tables created for each theme.

Relevant Prior Experience with Sustainability or Community Initiatives

Table 2

Theme "Prior Experience" with corresponding Codes

Main Theme	Codes	Definition	Example	N
Prior Experience	Prior Involvement with Sustainability	This code encompasses experiences relevant to sustainability initiatives.	*"I take the initiative to build my own company. And we were famous because we were in advance from everybody else in sustainability."*	7
	Prior Involvement in Community Initiatives	This code encompasses experiences relevant to community initiatives.	*"I'm involved here in the Dorpsraad. It's kind of community council."*	7

Many interviewees had a technical background, or their work related to the topic of energy. Examples include a chemistry teacher who educates students about environmental issues. Another person is employed as a national electricity transmission system operator, responsible for offshore wind energy projects. Still, another interviewee works as a sustainable finance officer at the Dutch central bank, she says *"I work as a sustainable finance officer. So D&D has a sustainable finance office, which is the sustainability hub within the organisation. So I'm part of a team that coordinates the strategy there. So also in my full-time job, I'm working on sustainability"*. Thus, many participants had previous involvement in sustainability through their education or professional careers. No difference in terms of occupation could be found between the four different levels, as also non-participants of the neighbourhood approach had prior experience with the energy transition due to their occupation, such as interviewee 25 who mentions *"I was working for an energy consultancy. So they are doing everything around alternative energy alternatives. So there I would have a lot of information and experts and people talking about it."*

While transcribing the data, it became apparent that the code "Prior Involvement in Community Initiatives" is quite prevalent among the data. This shows that quite some participants had a history of engaging in various community activities before their current involvement with LochemEnerie. Several participants were involved in energy and sustainability efforts. Interviewee 5 mentions *"I'm in the energy work group of [Village name]. There's about seven of us, and we discuss ways to make the energy transition happen in [Village name]."* Person 7 also helped to start a team focused on transitioning to energy

neutrality in his village. Additionally, Person 7 took on leadership roles within his community as he served as chairman of a Board. Participant 10 explains *"I'm involved here in the Dorpsraad. So it's kind of community council."* In addition to sustainability and governance aspects, interviewee 4 was active in educational and social initiatives by volunteering in a program educating children about the dangers of alcohol, smoking, and drugs. Non-participants did not indicate that they engaged in community initiatives before.

The prior involvement of many interviewees in diverse community initiatives may show that participants feel a strong sense of social responsibility. They prioritised contributing to the welfare and improvement of their local environment, demonstrating a proactive approach to societal issues. Furthermore, the involvement in prior community initiatives may have provided them with confidence and valuable skills and experiences, making them effective in their current role as initiators of the neighbourhood approaches.

Neighbourhood Dynamics

Table 3

Theme "Neighbourhood Dynamics" and corresponding Codes

Main Theme	Codes	Definition	Example	N
Neighbourhood Dynamics	Description of Neighbourhood and Relationship between Neighbours	Aspects that describe the neighbourhood; Descriptions of how neighbours interact with each other; community activities being organised	*"So generally, we have a neighbourhood barbecue every year. Everyone says hi to each other. Everyone's nice to each other."*	19
	Individual Actions	Personal efforts regarding renewable technologies	*"People do some things for themselves. So people are active for themselves relating to energy"*	10
	Positive Attitude	Positive attitude of neighbours towards renewable energies/ LochemEnergie.	*"I'm living together with three other families in this specific area over here at the farmhouse. And they are all energy neutral."*	11
	Negative Attitude	Negative attitude of neighbours towards renewable energies/ LochemEnergie.	*"The person we share our roof with, he's really big on conspiracy theories, so every time we try to gently nudge something in that direction, he's like: No, and here's all the reasons why this is just one big conspiracy by the government."*	10
	Social Impact of the Neighbourhood Approach on Neighbourhoods	Social impact e.g. changes in community cohesion, relationships or communication.	*"I do have nice contacts actually because of the Buurtaanpak. So the Buurtaanpak really is like a social cohesion mechanism."*	5

Description of Neighbourhood and Relationship between Neighbours

During the interviews, participants were asked to provide a description of their neighbourhoods, including the physical setting, the nature of relationships between neighbours, and the collective activities organised in their communities. Their responses highlighted the contrasts in neighbourhood dynamics and the varying levels of engagement among residents. The neighbourhoods varied in terms of age, layout, and population but most interviewees described that they are living in an ageing neighbourhood with a good financial situation. The relationships between neighbours also varied. Some participants described close-knit communities with frequent interactions such as interviewee 16 who explains *"We have our street and it's a very active street. We have parties together. We visit each other's birthdays, and we have a yearly festival in the village and then we have a parade like you have with the carnival and we're building the car together. So, that's something we do every year. So, the neighbourhood is already quite connected. We help each other out. So, yeah, it's like a group."* Others noted more distant relationships. For instance, Interviewee 5 mentioned that although people in her neighbourhood are nice and there is an annual barbecue, the relationships remain mostly on a surface level without deep connections. Similarly, Interviewee 23 pointed out that in her neighbourhood, while neighbours take each other's packages, there is minimal interaction beyond that. Interviewee 11, 20 and 25 highlighted the role of technology in community interaction, mentioning that their neighbourhoods use WhatsApp groups to stay connected and organise activities. Interviewee 25 mentions that although her neighbourhood seems rather connected, her family, due to being newer and bilingual, is not integrated as deeply.

Looking at the four identified levels of participants, it can be said that initiators generally described their neighbourhoods in detail, highlighting rather strong community activities and connections. They actively engage in organising and participating in neighbourhood events, such as barbecues, neighbourhood energy strategies, and yearly festivals. They mention efforts to evolve and improve the community, often leading new initiatives and bringing in new ideas. One early adopter describes her neighbourhood as having surface-level friendliness and annual neighbourhood barbecues. However, she perceives a limit to deeper, meaningful engagement, aiming to maintain social harmony without pushing for substantial changes. Followers described occasional community activities, such as WhatsApp groups, barbecues, and neighbourly help. Non-participants like interviewee 23 mentioned minimal engagement with their neighbours. They note a lack of

intense community connections, but they also mentioned that they are not interested in forming deep connections to their neighbours.

While some differences could be observed between the four levels, it is important to note that these levels of neighbourhood connectedness were not consistently observed throughout all groups. For instance, person 17, categorised as a follower, described his neighbourhood as individualistic, highlighting those perceptions of neighbourhood connectedness varied also within groups. However, it seems like a difference can be observed between the first and last groups as initiators feel more connected to their neighbourhoods and non-participants seem to generally be less interested in close contact with their neighbours.

Individual Actions

During the conversations, it was often mentioned that interviewees observed their neighbours taking individual action regarding energy transition. Participant 10 notes *"People do some things for themselves. So people are active for themselves relating to energy"*. Participants explained that neighbours did not get renewable energies within a collaborative action but decided for them individually or might have moved into a house that already had those technologies installed. Interviewee 19 explains *"These people already have everything integrated into the new build home. They do not use any gas or whatsoever. These people do not need the help of LochemEnergie."* Next to that interviewee 8 observed that some of his neighbours were present at the meetings from LochemEnergies neighbourhood approach however, were not interested in following a collaborative action. He states *"There are a lot of people who have high education, have a very good income and they are more on their own. They think, I know it the best and they don't need any support. They are only curious what happens. They use that information for themselves and take on that. We have some neighbours on the other side of the street. They were at the all the meetings. We did those specialised meetings about solar panels and about the heat pumps, etc. And they show up, go home and take the knowledge with them and take their own measures for themselves."* Additionally, interviewee 23, who is part of the non-participants explained that she was interested in joining a collaborative approach of getting home insulation coordinated by LochemEnergie. However, there was no such collaborative approach started in her neighbourhood via the corporation. Thus, she decided to take individual action. The interviews revealed that some residents rather take individual initiative in energy transition instead of joining a community approach. This suggests that LochemEnergie may need to

adapt its neighbourhood approach to accommodate and support the diverse range of individual actions already underway in the community.

Attitude of Neighbours towards renewable energies or LochemEnergie

However, the observation of interviewees that some of their neighbours had already installed renewable energy technologies such as solar panels, heat pumps, and electric cars indicates that those neighbours have a positive attitude towards renewable energies. In many conversations, several neighbours were described as generally positive and proactive regarding renewable energy and sustainability measures. For example, three interviewees noted that their neighbours were interested in and actively participating in energy initiatives. They mentioned enthusiastic responses to invitations for meetings and initiatives related to renewable energy. For example, interviewee 7 explains that his neighbours reacted positively after being invited to a meeting in which they would learn about and discuss renewable energies *„Everyone was very positive. Already when I invited them – I went personally. I visited them all individually. And I asked if they are interested in participating. Well, I explained what the purpose of the meeting would be in our process would be. And they got enthusiastic already up front."* Furthermore, participant 1 highlighted this positive attitude, noting that during a neighbourhood meeting regarding renewable energies, every neighbour was present, showcasing a high level of participation and interest in those technologies. Looking at the description of his neighbourhood that participant 1 provided (see Appendix A), this strong turnout may be due to positive relationships and dynamics within the neighbourhood which played a crucial role in mobilising residents to participate actively in the energy initiatives. Thus, fostering positive neighbourhood dynamics seems to have the power to enhance the success of energy-related initiatives by encouraging widespread participation.

Despite the overall positive attitudes towards renewable energy among many neighbours, several interviewees noted negative attitudes and a lack of interest from some community members. It was mentioned that some neighbours did not attend meetings or take any measures towards sustainability, even when they had the financial means to do so. Two interviewees indicated that a few neighbours hold strong beliefs against renewable energy, viewing it as a government conspiracy or fearing that technologies like solar panels might have hidden dangers. For example, interviewee 5 mentions *"The person we share our roof with, he's really big on conspiracy theories, so every time we try to gently nudge something in that direction, he's like: No, and here's all the reasons why this is just one big conspiracy by*

the government." That same interviewee also describes another interaction with one of her neighbours *"She said, Oh, but you do know that solar panels are the new asbestos, right? And I decided to not go into that. So that's an opinion."* Furthermore, three participants mentioned that they have neighbours, including elderly individuals, who were not interested in changing their habits or adopting new technologies even though they have the financial resources. For some, the perceived hassle or cost outweighed the benefits. Overall, while the communities of interviewees generally showed a neutral to positive trend towards renewable energy, however, negative attitudes and resistance were evident, which might pose challenges to broader adoption.

The Social Influence of the Neighbourhood approach on Neighbourhood Dynamics

It became apparent that the neighbourhood approach seems to have a social impact on community cohesion, relationships, and communication among participants. Several interviewees highlighted the positive changes within their neighbourhoods, emphasising how the initiative facilitated new connections and strengthened existing ones. During the interviews, it was noted that the neighbourhood approach brought people together, often for the first time, fostering introductions and new relationships that otherwise might not have occurred.

For instance, interviewee 18 observed that people who did not previously know each other, met for the first time through the initiative. Similarly, participant 19 mentioned that the neighbourhood approach also created room to ask and give each other advise. He explains *"I am quite sure that lots of people met each other in one of these meetings and still talk with each other or have each other's advice"* Person 15 says *"I do have nice contacts actually because of the Buurtaanpak [Neighbourhood Approach]. So the Buurtaanpak really is like a social cohesion mechanism."* After the neighbourhood approach in one area ended, one subgroup maintained ongoing community engagement. Participant 19 reported that even though his group no longer meets regularly, a subgroup continued to collaborate on other local initiatives, such as making the neighbourhood greener by e.g. planting trees. This suggests that the approach from LochemEnergie can have a lasting impact on community interaction beyond its immediate goals. Interviewee 8 noted that people in the neighbourhood now approach each other, not only for energy-related queries but also for casual conversations.

This observation indicates an improvement in overall community communication and friendliness. In summary, the neighbourhood approach seems to have the power to enhance

social cohesion in participating neighbourhoods. It has enabled residents to meet and form new connections, sustained ongoing community engagement in various initiatives, and improved general communication among neighbours. These outcomes illustrate the broader social benefits of neighbourhood-based approaches to sustainability and community development.

Motivational Factors and Barriers influencing Participation

Table 4

Theme "Motivational Factors and Barriers" and corresponding Codes

Main Theme	Codes	Definition	Example	N
Motivational Factors and Barriers	Barriers to Participation	Factors that hinder participation.	*"A lot of people are struggling. What can I do? And how do I have to approach it?"*	19
	Intrinsic Motivation and Altruism	Motivation driven by environmental concern, desire to contribute to the greater good, caring for future generations.	*"I did want to do something with clean energy. Just because I am a chemistry teacher, I am standing in front of the classroom telling 200 students a year about the nitrogen crisis, about the CO2, about everything. And it feels very weird to tell all that stuff and then not do something about it yourself. So I really try to sort of model for them what kind of adults I want to be, and what kind of adult I would like them to grow up to be."*	11
	Extrinsic Motivation	Motivation driven by financial incentives, wanting to be independent from industry.	*"The money because they have big bills lately, you know. So, they want to change something."*	15
	Decreased Motivation	Motivation diminished because of e.g. lack of involvement of neighbours.	*"It's sometimes difficult to get people motivated. And then your own motivation is decreasing."*	7

Barriers to Participation

During the conversations, interviewees from the first three levels were asked about what barriers people in the community may perceive and what keeps others starting. Their answers highlighted several barriers to participation in sustainable energy initiatives. A significant barrier was the cost associated with sustainable energy solutions. Many individuals expressed concerns about the high upfront investment required for those technologies. Retirees and older individuals, in particular, were a bit hesitant to make investments because they may not benefit from the technologies as it takes some years before the investment returns in terms of saved energy and thus money. Another barrier that was mentioned was the

practical or logistic aspect of implementing energy-efficient solutions. Issues such as the mess and disruption caused by renovations, the complexity of choosing the right technologies, and concerns about the efficacy and practicality of solutions like heat pumps and solar panels were common. Interviewee 16 observes *"If you look at the wives, they are like what does that mean, does that mean that I have to re-paint the walls, or that the attic will be completely changed? Or that I have to renovate the bathroom? So they are more reluctant."* The physical characteristics of homes, such as the presence of trees or old infrastructure, also pose a significant barrier that keeps people from installing renewable energies. Furthermore, it was mentioned that there is a lack of clear, accessible information about sustainable practices and their benefits. Individuals may feel overwhelmed by conflicting information and are uncertain about the best course of action for their specific situations. For example, interviewee 5 mentions *"I think the biggest challenge is that there's no clear answer, right? It is not just that you can say, "Do this and then it's good". Every person's situation is different, and it is not really clear what the best situation is a lot of the times."* Additionally, some people had concerns about changing regulations and future returns on investment which further strengthens these uncertainties.

In the interview with interviewee 10, a different explanation was discussed. He explained that it appears that there is interest in community involvement regarding sustainability topics like biodiversity. However, his neighbours are less enthusiastic about collaborative efforts specifically focused on renewable energy technologies. He suggested that the appeal of biodiversity initiatives lies in their broader community impact, contrasting with energy initiatives which are perceived as more individually impactful. He speculates *"This is just a theory, but taking again the example of biodiversity, firstly this is basically a topic that is outside your own households. It has to do with the with the broader community. And energy is more at the individual level because it directly affects your own situation. But this is, this is just a wild guess."* This perspective has significant implications for LochemEnergie's neighbourhood approach. It suggests that while fostering community engagement around sustainability is possible, efforts specifically targeting renewable energy may be less successful.

Lastly, non-participants were asked to explain why they were not interested in joining. They highlighted that their individual circumstances and priorities influence participation. They question the immediate benefits of sustainable investments, especially if their current energy needs are low or if they do not plan to stay in their homes long-term. Additionally, the perceived inconvenience and effort required to adopt new habits or make lifestyle changes can

deter participation. However, it must be noted, that two of the non-participants would have been interested to join LochemEnergie, however, there was no suitable action started or Interviewee 24 explains that there was another, similar initiatives that had a more appealing offer "*They were at the time but the proposal from the other was better. So that made me participate with the other one.*"

Intrinsic Motivation and Altruism

Many of the interviewees showed a deep concern for environmental issues and their desire to contribute positively to society and nature. They express a genuine commitment to sustainability, driven by a need to mitigate climate change, reduce pollution, and promote eco-friendly practices in their communities. For some, this motivation stems from personal experiences or observations of environmental degradation, which sparked a lifelong dedication to become more sustainable. As an example, interviewee 4 lived close to Groningen and stopped using gas as solidarity with the people in Groningen. Furthermore, participants see their actions not only as a way to improve the immediate environment but also as a legacy for future generations. This sense of responsibility is coupled with a desire to set an example for others, like participant 5 who says "*I did want to do something with clean energy. Just because I am a chemistry teacher, I am standing in front of the classroom telling 200 students a year about the nitrogen crisis, about the CO2 about everything. And it feels very weird to tell all that stuff and then not do something about it yourself. So I really try to sort of model for them what kind of adults I want to be, and what kind of adult I would like them to grow up to be. So that was really important.*" There was also a strong altruistic component in their motivations. Many participants expressed a willingness to help others with the energy transition and thus, contribute to the well-being of future generations.

Additionally, participant 4 explained that she and her husband were enthusiastic about energy transition intrinsically, but being part of an initiative like LochemEnergie in which she met like-minded people and participants support each other, facilitated her motivation even more "*We were enthusiastic, of course, from ourselves. It's just in our genes or something. And then to be in an organization helping others think about climate change. That is great!*" Furthermore, interviewee 15 indicated that her intrinsic motivation inspired close others to also become active "*I'm the one who considers sustainability important. And then I just think they got a bit convinced also perceived it important [...] I inspired them to also be enthusiastic about these topics.*"

Extrinsic Motivation

On the other hand, next to being intrinsically motivated, participant 15 *says "I think that economic arguments cannot be neglected. I think that people are interested in certain sustainability measures, but also because of economic arguments. So I think it's really the combination, and for some, the impact on the world is more important than the economic benefits they can extract from it. I see it like a mix".* Other interviewees mentioned extrinsic motivation being the primary drive for individuals to engage in the energy transition. Those extrinsic motivators are the financial incentives and the desire for independence from industry. The interviewees mentioned that many people are motivated to adopt sustainable practices to reduce their energy costs, particularly in response to high energy prices and economic uncertainties. Three participants stated that the financial factor was their main motive to get renewable technologies in their homes. Other participants mentioned that it was a nice side effect or reinforced their intrinsic motivation such as participant 11 who states *"That is also motivating to see how simple it sometimes can be to lower your gas bill. And still not freeze."*

Additionally, some participants expressed a desire to be independent from big energy corporations, seeking to gain control over their energy sources. This drive for self-sufficiency was also seen as a way to ensure stability in times of fluctuating energy prices or geopolitical tensions, such as the war in Ukraine. Overall, while most participants said that finances were not their main motivator, they recognised the significant role that economic factors play in their decision-making processes. The blend of financial savings, the desire for energy independence, and the practical benefits of sustainable living all contribute to the extrinsic motivation to adopt eco-friendly practices.

Decreased Motivation

Interviewees observed that fluctuations in economic conditions, such as rising or falling energy prices, significantly influence motivation levels. Higher energy costs may initially make people interested in energy-saving initiatives, while decreases in prices can lead to decreased motivation to invest time and resources. Additionally, broader societal or political crises can overshadow environmental concerns, shifting attention and resources away from sustainability initiatives. This shift in priorities often results in a decline in efforts to maintain sustainable practices.

As a result of the decreased motivation of people in the community, initiators also report feeling less motivated to organise collective activities within the context of the neighbourhood approach. Two interviewees highlight the importance of community

involvement in sustaining their motivation. When there was a lack of support or active participation from neighbours or peers, initiators seemed to feel discouraged or disinterested in continuing efforts. As an example, interviewee 4 highlights *"For me, it stops now. I don't feel the need to pull on a dead horse in my neighbourhood anymore."* Another initiator mentions concerns about the reduced motivation among community members and the uncertainty about how to continue the neighbourhood approach to make it successful again. In summary, decreased motivation for taking on community initiatives for sustainable actions often stems from economic fluctuations. As a result, initiators of those collective actions also feel demotivated over time.

Community Engagement and Belonging

Table 5

Theme "Community Engagement, Belonging and Learning" and corresponding Codes

Main Theme	Codes	Definition	Example	N
Community Engagement, Belonging and Learning	(Need for) Community Belonging	Feelings or the need to being part of the community, connection with neighbours or LochemEnergie.	*"The village is quite close knit, and I did want to be part of it in some way. I just didn't know what exactly, because generally, the way to get into the culture is to participate in parties and stuff. But I'm not really a social creature, so that wasn't really my way in."*	7
	Collective Action and Community Support	Instances of neighbours helping each other, community cooperation, and learning from the actions of others in the community.	*"With one of the neighbour group we started together in 2009 to rebuild this farm and their farm we did it together. And we did it we made the same conclusion that we wanted to be energy neutral. And the other neighbours arrived five years ago and they found out the situation we had and they decided before they came over here to do the same so they changed their home and made the same steps so we together have no gas on this this area."*	16
	Effectiveness of Small Groups	Statements/ explanations about smaller groups being more effective than bigger groups and why.	*"I believe that it's much better to help someone in detail, to actually help someone instead of just someone listening to a story that they could have also found on the internet. Yeah, that personal approach really, really works, we've found."*	5

The (Need for) Community Belonging

The code "(Need for) Community Belonging" was applied to several units of analysis throughout the data, reflecting a common motivation among participants to integrate into and

contribute to their local community. This desire for belonging and involvement was expressed by various interviewees. For example, participant 10 mentioned that one of his primary motivations for getting involved in the neighbourhood approach was to become more engaged with the community and meet other residents, especially since he worked outside the village. Thus, he tried to fulfil his need to be important and be involved locally to feel connected by joining the neighbourhood approach of LochemEnergie. Similarly, interviewee 5 also expressed a clear desire to integrate herself into the close-knit village community: *"The village is quite close knit, and I did want to be part of it in some way. I just didn't know what exactly, because generally, the way to get into the culture is to participate in parties and stuff. But I'm not really a social creature, so that wasn't really my way in."*

On the other hand, person 8 mentioned a lack of engagement among his close neighbours due to new people moving to the area. He was upset about the new residents not making an effort to connect to their neighbourhood and tried his personal efforts to connect with them through the neighbourhood initiative *"And we have three houses which changed, of which two didn't make any contact at all. They didn't take any initiative at all. So via the Buurtanpackt, I connected with them, and invited them to join the meetings."* He also reflected on his past lack of community involvement and his desire to contribute locally after stepping out of his company. He said *"My drive was that then it is also for my local community, because I was always travelling around, I just was here in the weekends. And I didn't play any role in my own neighbourhood, in my own community where I live. And when I stopped with my company, when I stepped out, I thought now it's important period to also do something back to my own community."* Interviewee 15 also expressed a strong intent to use the neighbourhood approach to bring the neighbourhood together, particularly in light of recent changes and new households. She highlighted discussions with neighbours about strengthening community bonds. She said that the neighbourhood approach might help in creating a bond between neighbours.

The data reveals a shared sentiment among interviewees: a significant need to be part of a community and to actively contribute to its cohesion. The participants viewed the neighbourhood initiative as a potentially valuable tool to foster a sense of belonging among residents. Participants' motivations ranged from overcoming personal social barriers to addressing broader community disengagement, all converging on the goal of enhancing local bonds and participation. This insight highlights the importance of community-driven projects in fostering social cohesion and individual fulfilment within local settings.

Collective Action and Community Support

  The code "Collective Action and Community Support" emerged as a significant pattern in the data, illustrating how participants of the neighbourhood initiative engaged in reciprocal assistance and share knowledge in their communities. This mutual support was particularly evident in their efforts to address common challenges and achieve shared goals, particularly in the context of energy efficiency and sustainability initiatives. During the interview, person 9 discussed how she invited neighbours to her home to discuss topics related to clean energy. The meeting was about sharing their experiences and learning from each other. She mentioned that after that meeting, one of her neighbours came around and asked for clarification *"A neighbour came a few days later after we had the meeting: Oh, so how did you do that with that, your drinking water, can I do this on my property?"* Additionally, interviewee 17 shared his positive experiences at the Energy Café, where he both received and provided help. Person 4 states *"You also want to give back. You get information and advice from people. Everybody is so willing to help you and, yeah, that's when you want to give back as well."* These observations imply that community hubs like the Energy Café foster a strong sense of reciprocity and mutual support, essential for successful collective action. The willingness to help and give back creates a supportive environment, enhancing engagement and trust among community members. Participant 18 highlighted that this approach worked especially well among residents living in similar houses. This naturally brought them together as they faced very similar problems and solutions could be applied to all of them. He emphasised the collaborative efforts in projects like wall insulation, where working together made the process easier and more manageable. Yet another participant noted that many residents continued to seek each other's advice after meeting at community events, indicating lasting bonds formed through these interactions.

  Interviewee 16 emphasised the necessity of collective action for a successful energy transition. He states, *"For me, this transformation that we're trying to accomplish is huge. It's really complicated. It's going to hurt us. We need everyone to do their part and to join in and to participate. And it's also something like showing the others that you can do things yourself [...] So, giving the example and motivating and stimulating other people."* This perspective highlights the critical role of community engagement and mutual support in driving significant changes. According to interviewee 16, the energy transition is not only a technical challenge but also a social one, requiring the active participation and cooperation of all community members. This underscores the idea that individual actions, while important, may not be sufficient on their own to achieve the desired outcomes. Instead, a collective approach,

where individuals are both participants and motivators, is essential. Interestingly, interviewee 24, despite being categorised as a non-participant, shared a similar viewpoint. He emphasises *"It's important that as much as possible people participate to make the energy transition happening and so that we try to reduce the heating of the earth."* Thus, he believed widespread participation to achieve the energy transition and mitigate climate change is of importance, specifically to reducing global warming. This alignment in views between an initiator and a non-participant suggests a broader recognition of the need for collective efforts in the community.

Furthermore, interviewee 17 appreciated the independent advice without commercial interests and valued the exchange of practical tips among neighbours. Person 11 emphasised the social aspect of knowing and cooperating with neighbours, which facilitated decisions like purchasing heat pumps. She notes, "*Really, knowing that it's a good company, that you have the information, that you have seen examples of your neighbours. Yeah, I think that has been a factor in this respect.*" Participant 15 also said that the community aspect worked like a catalyst in this example. She mentioned that the decision to get a heat-pump would have taken longer normally and she doubts that as many households would have purchased one when making the decision individually. These insights demonstrate how participants use their community connections to provide and receive assistance, share experiences and information and collaboratively address challenges regarding energy transition. This mutual support was crucial in fostering a sense of belonging and cooperation, as neighbours relied on each other for advice and practical help. The social interactions facilitated by initiatives like the neighbourhood initiative seem to not only address individual needs but also strengthen the overall community fabric, making collective progress more attainable and sustainable.

The Effectiveness of Small Groups

Participants described that the approach of the neighbourhood initiative was changed in several neighbourhoods. Before, LochemEnergie organised meetings to which many inhabitants of a big area were invited. However, now they started smaller-scale meetings in which one person organises a meeting with just a few close neighbours at their home. Participant 16 compares these evenings to Tupperware Parties where the success stories and practical demonstrations by knowledgeable individuals inspire others to take similar actions. Several interviewees mentioned that this more personal approach seems to work better than those big meetings organised by LochemEnergie previously. The analysis of the interview

transcripts reveals that smaller-scale meetings are perceived as more successful than larger ones in the context of LochemEnergie's neighbourhood approach.

The following factors were mentioned by interviewees that contribute to this increased effectiveness. Firstly, smaller meetings enable more personalised interaction. Interviewee 5 emphasises the value of detailed, personalised help over general information dissemination, which can often be found on the internet *"I believe that it's much better to help someone in detail, to actually help someone instead of just listening to a story that they could have also found on the internet. That personal approach really, really works, we've found."* Similarly, interviewee 7 mentioned that these smaller meetings are more flexible and can be tailored to the specific needs and interests of the group. This adaptability ensures that the discussions are relevant and engaging, leading to higher levels of participation among neighbours. That person also highlights that large meetings often lack follow-up, making it challenging to track whether attendees of the bigger meetings actually act on what they have learned. He explains that within those smaller settings, a follow-up is easier due to the closer relationships and more direct communication channels among neighbours. Additionally, it was mentioned by two interviewees (7 & 9) that smaller groups foster a more open and comfortable environment where participants feel free to discuss their plans and needs. Since the attendees are neighbours who already know each other, there is a higher level of trust and openness, as noted. Person 7 mentions *"They know each other. They dare to speak about their plans and their needs. It makes it rather open discussion."* Thus, this familiarity promotes honest communication and a willingness to share experiences and seek advice. Participant 7 notes that these "family meetings" encourage neighbours to collaborate, share resources, and support each other's sustainability efforts.

Discussion

The study aimed to get more insight into the social factors that motivate participants to get involved in collective renewable energy initiatives. Therefore, a qualitative interview study was performed. Based on the transcripts of the interviews, four themes were developed that depict patterns regarding participants' experiences with the neighbourhood approach of LochemEnergie.

Social Factors Influencing Participation

The study revealed diverse (social) factors that reinforce or hinder engagement in collaborative sustainable energy approaches. Many of the interviewees had prior involvement

in community initiatives, reflecting a sense of social responsibility and readiness to contribute to local welfare. Neighbourhood dynamics varied for the different participants, from close-knit communities with frequent interactions to more distant relationships among neighbours. Initiators highlighted more robust community activities and initiatives and being proactively involved in fostering a stronger community within their neighbourhood. In contrast, non-participants exhibited less engagement, often due to less personal interest. Motivational factors ranged from intrinsic concerns about environmental impact and altruism to extrinsic motivations like financial factors. However, fluctuations in energy prices seemed to lead to decreased motivation among participants and in turn also impacted initiators' motivation to engage and plan new activities. This highlighted the importance of sustained community involvement. However, the results did not clearly identify the created theoretical framework integrating various theories from social psychology within an adapted version of Rogers' Diffusion of Innovations theory. Nevertheless, elements of the theoretical framework can be observed throughout the findings.

The interviews highlighted the importance and effectiveness of opinion leaders to make other individuals in the community aware of the initiative. Opinion leaders and change agents are key concepts in the spread of innovations, particularly in the context of Rogers' Diffusion of Innovation Theory (2003). For example, one participant explained that she inspired close others to also become enthusiastic about topics centred around sustainability and LochemEnergie. Furthermore, the increased success of smaller group meetings with close neighbours compared to large meetings organised by LochemEnergie might be explained by the concept of opinion leaders and change agents. In these small-scale meetings, one initiator invites close others from their social surrounding to discuss ideas and options regarding energy transition together as a group. Thus, the initiator might act as a change agent as they make others in their surroundings aware of the initiative and provide information and support. Additionally, the success of those small meetings might also be explained by the social-psychological concept of Sense of Community by McMillan and Chavis (1986). In the theoretical framework, it was explained that this theory might help to draw on existing social structures to introduce a collaborative energy initiative. The success of the small-scale meetings might be explained by an already existing sense of community that people already had with their neighbours. This pre-existing sense of community makes it easier to communicate more openly about wishes and needs, making the discussion more constructive and helpful.

The findings reveal that a Sense of Community can develop within newly formed groups of individuals engaged in community initiatives. An illustrative example of this dynamic was provided by interviewee 8, who explained that a subgroup, initially formed through the LochemEnergie neighbourhood approach, continued to collaborate on environmental projects even after the official program ended. This subgroup, composed of individuals who might not have known each other before the initiative, exemplifies how new social bonds and collective identity can emerge through shared goals and cooperative efforts. This example highlighted that the Sense of Community is important for sustained collective action and can also arise from newly formed groups within community initiatives like the LochemEnergies neighbourhood approach. This example underscores the significance of the Sense of Community in fostering sustained collective action. According to the theoretical framework, this sense of belonging and connection is crucial for individuals' continued engagement in community initiatives. It supports the idea that social dynamics within newly formed groups play a vital role in motivating ongoing participation, as evidenced by the collaborative efforts of this subgroup beyond the initial initiative.

The results also indicate that the Social Cognitive Theory and the concept of Collective Efficacy play a crucial role within the neighbourhood approach of LochemEnergie. Within his Social Cognitive Theory, Bandura explains that individuals acquire knowledge and skills by observing others who engage in these behaviours (Tajfel & Turner,1979; Turner, 1987 as cited by Kwasnicka et al., 2016). The transcripts reveal that this is exactly what the majority of interviewees observed within their neighbourhoods. Meetings organised within the neighbourhood approach play a role in facilitating knowledge sharing and collective action. Residents would often discuss their sustainability projects, such as home insulation or installing solar panels, with their neighbours, thereby spreading information and inspiring others to take similar steps. This environment made it easier for residents to undertake complex projects by drawing on the experiences and advice of their peers. Moreover, the concept of Collective Efficacy is evident in how the neighbours support each other. The shared goal of achieving energy efficiency and sustainability created a collective problem-solving approach to address common challenges. For instance, neighbours with similar housing conditions collaborated on an electric heat pump project, reducing individual costs and increasing the feasibility of these initiatives. The neighbourhood approach of LochemEnergie also emphasised the importance of role modelling which is a key feature in Bandura's theory. Several interviewees mentioned how seeing the tangible results of their neighbours' efforts motivated others to ask for advice and reviews.

Limitations and Future Research

When discussing these findings concerning other literature, it is crucial to consider the limitations of this study. Several weaknesses were identified that may have impacted the overall outcomes and interpretations. The comprehensive theoretical framework applied in this study may have been too complex given the scope of this interview-based research. The integration of multiple social theories within an adaption of Roger's framework could not be fully captured or validated due to the constraints of the interview format and the small sample size. This complexity may have overshadowed the more straightforward insights that could have been gleaned from a simpler framework. The relatively small sample size also might have limited the ability to cover all aspects of the theoretical framework comprehensively, as especially early adopters and nonparticipants were not sufficiently represented within the present sample. This constraint made it difficult to prove the accuracy or applicability of the integrated social theories within the context of the study. Future studies might work with a simpler theoretical framework, such as only focusing on a single stage of Rogers' adoption process, focusing exclusively on one of the four identified adopter categories or redefining a categorisation scheme to categorise participants. Attention should be given to reworking the classification scheme as the four-level categorisation of participants - initiators, early adopters, followers and non-participants - did not work as effectively as anticipated. Some non-participants were not disinterested in joining the LochemEnergie neighbourhood approach but were influenced by other factors such as no suitable neighbourhood approach fitting their needs being present or other organisations providing a better offer. This made it difficult to categorise them accurately. Additionally, distinguishing between initiators and early adopters proved to be challenging as there were only minor differences between those two groups. This indicates that the classification scheme might need refinement for better clarity and utility, or a bigger sample size is needed to really be able to observe differences between the levels. Furthermore, a narrowed focus could provide more in-depth insights and make the research more manageable, allowing for a clearer understanding of specific social factors influencing participation in renewable energy communities.

Furthermore, while conducting the interviews, it became evident that participants did not expect to discuss the social aspects of the neighbourhood approach extensively. This was realised because participants often did not answer the question properly and did not include the social, and neighbourhood level into their answers. Consequently, social factors were not the primary focus for many interviewees. To avoid making participants feel uncomfortable or

pressured, questions were also not repeated excessively, which may have led to incomplete data on the social dynamics, which were of interest in this study. Future studies should consider setting another focus of the interviews and phrasing questions more efficiently to elicit comprehensive responses about social interactions and community engagement. Thus, the interview scheme should be adjusted. This could be done by clearly explaining the focus on social dynamics at the beginning of the interview to set participants' expectations. Furthermore, the interviewer could more clearly emphasise the importance of discussing social interactions and community engagement. Furthermore, more specific answers could be included such as "Can you share a specific example of a time when your neighbourhood came together to support a sustainability initiative?" At the end of the interviews, participants could be encouraged to share any final thoughts on the social dynamics of the neighbourhood approach, instead of just generally asking for final thoughts they want to share.

The qualitative nature of this research limits the generalisability of the findings, as the insights gained from the interviews are quite specific to the LochemEnergie project and may not apply to the broader population or similar renewable energy initiatives. To enhance the generalisability of future research, incorporating quantitative methods or larger, more diverse samples from different initiatives could be beneficial. Additionally, language barriers presented a challenge in the data collection phase, with some interviews being less insightful due to communication difficulties. In some cases, entire interviews could not be used, potentially leading to the loss of valuable data. This underscores the importance of ensuring clear and effective communication channels in future studies, possibly through the use of translators or more accessible language options. Addressing these limitations will be critical for enhancing the robustness, reliability, and applicability of findings related to community-driven renewable energy projects and the associated social dynamics.

Strengths

Despite the identified weaknesses, this study also has several strong points that contribute to the research of understanding social factors influencing participation in energy initiatives such as the LochemEnergies initiative. To begin with, this study is one of the first qualitative investigations aimed at specifically exploring the social factors that influence participation in renewable energy initiatives. By focusing on in-depth, qualitative interviews, the gathered data provides rich, detailed insights into the personal and communal dynamics that quantitative methods might overlook.

Furthermore, this research was conducted within the context of a real energy cooperation and real participants from their neighbourhood initiative. Thus, this project offers a real-world perspective on the challenges and successes of community-driven energy initiatives. This context provides practical insights that can inform the design and implementation of similar projects elsewhere. For example, the study successfully identified and highlighted key social factors, such as the role of community support, peer influence, and collective action, in motivating participation. These insights are valuable for understanding how to foster greater engagement in energy initiatives. Next to that, the finding of the enhanced effectiveness of small group versus larger group meetings provides actionable insights for LochemEnergie and similar initiatives.

By integrating a theoretical framework with empirical findings, the study contributes to both academic literature and practical applications. It bridges the gap between theory and practice, offering the first idea for a framework to understand the social factors in energy initiatives. Thus, the study lays a foundation for future research by identifying key areas for further investigation. It opens opportunities for more extensive studies that can build on its findings and address its limitations, thereby advancing the field of community-based renewable energy research.

Practical Implication

The findings of this study highlight several practical implications for LochemEnergie and other renewable energy cooperatives seeking to enhance community engagement and project effectiveness. The need for community belonging emerged as a significant motivational factor for participation in LochemEnergie's initiatives. Participants often sought to integrate into their local community and contribute to its cohesion. For instance, some joined the neighbourhood approach to meet other residents and feel more connected locally. Therefore, LochemEnergie and similar cooperatives should focus on creating opportunities for meaningful community engagement that fulfil this need for belonging. Initiatives should continue organising community events, fostering collaborative projects, and ensuring that new residents are actively invited and integrated into the community efforts. By addressing the desire for social integration, cooperatives can motivate more residents to participate and stay engaged.

The shift from large meetings to smaller, more personal gatherings was found to be more effective in engaging participants. Smaller meetings allow for personalised interaction, flexibility in addressing specific needs, and higher levels of trust and openness among

participants. Within the interviews, the concept of collective action and community support was also mentioned frequently by the participants. They mentioned the importance of mutual assistance and shared knowledge in addressing common challenges. Therefore, LochemEnergie should continue to emphasise and expand this approach. Organising small group meetings in residents' homes or local community centres can facilitate deeper connections and more meaningful discussions. This strategy also allows for better follow-up and sustained engagement, as participants are more likely to act on information received in a familiar and supportive environment. Thus, LochemEnergie should focus on the small-scale meetings. This is a more bottom-up approach and makes use of already existing social groups in which people already know and trust each other and feel a sense of belonging that might foster their motivation. Furthermore, change agents seem to play a big role in those small-scale meetings as they motivate and support others. In the interviews, it became clear that there are many interviewees, especially initiators and early adopters, willing to act as change agents. However, at the moment, they feel stuck and do not know where to start and how to continue with the neighbourhood approach in their community. Thus, LochemEnergie should assist them and support them in setting up those small-scale meetings for instance by helping with creating invitation flyers, providing an energy coach or providing snacks and drinks for a cosy setting in which people feel comfortable.

Furthermore, many interviewees appreciated that LochemEnergie provides objective advice without the pressure of commercial interests. This perception of independence and trustworthiness is crucial for maintaining the cooperative's credibility and fostering the long-term engagement of its participants. Therefore, LochemEnergie should try to remain independent and objective, avoiding partnerships with companies that might compromise this perception. By continuing to offer unbiased information and support, LochemEnergie can ensure that community members feel confident in their involvement and the advice they receive. By implementing these practical strategies, LochemEnergie and similar cooperatives can better meet the needs and motivations of their community members, thereby fostering stronger, more cohesive, and more effective renewable energy initiatives.

Conclusion

This study aimed to explore the social factors influencing participation in collective renewable energy initiatives, focusing on LochemEnergie's neighbourhood approach. The findings highlighted key motivators such as a Sense of Community belonging, social responsibility, and the influence of opinion leaders and change agents. Small-scale meetings

were found to be more effective than large gatherings in fostering engagement, and leveraging existing social networks and trust. Additionally, the perception of LochemEnergie's independence and objectivity was crucial for maintaining participant trust and engagement. Practical recommendations for LochemEnergie include emphasising small-group meetings, supporting change agents with resources and guidance, and maintaining independence to ensure trustworthiness. These strategies can enhance community cohesion and effectiveness in renewable energy initiatives. While the study provides valuable insights, its limitations include a small sample size and complex theoretical framework. Future research should consider simpler frameworks and larger samples to enhance generalisability and deepen understanding of social dynamics in community energy projects. Overall, this research contributes to the effective design and implementation of community-driven renewable energy initiatives.

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Appendix A

Table 1

Overview Interviewee Profile

ID	Level	Demographic Data	Education/ Occupation/ Voluntary work	Neighbourhood Description
1	Initiator	68 years, Male	Worked for the government and at the local municipality; Board member of city council	The neighborhood is a close-knit and cooperative community where residents engage in activities together. It comprises approximately 18 houses, including three small farms and a castle. The newest home is constructed in 1950. The community holds a neighborhood barbecue.
4	Initiator	66 years, Female	Was a secretary; did voluntary work with children at school e.g. advising children against alcohol, smoking, and drugs	The neighborhood is characterized by a variety of clubs and activities. Within two to three months, the individual joined numerous clubs. However, social activities are clustered within small, distinct neighborhoods, lacking overall unity. Despite the large geographic area, the population is not dense, with relatively few residents. The neighborhood has a mix of affluent and less affluent residents, with approximately 70% being rich and 30% being less rich. The community is mixed in terms of age, also including young families.
5	Early-Adopter	29 years, Female	Chemistry Teacher; Volunteer at the energy work group in her village	The neighborhood hosts an annual barbecue, where residents greet each other and maintain a friendly demeanor. On a surface level, interactions are cordial and pleasant. However, the desire to preserve this surface-level niceness prevents the initiation of any meaningful or impactful projects.
7	Initiator	68 years, Male	Was in the management team of telecommunications companies;	The location consists of an area shared by four families, all elderly or retired, living in close proximity. In 2009, one neighbor group collaborated to rebuild their farms with the aim of becoming energy neutral. Five years ago, the other neighbors arrived and, upon

			Voluntary work as chairman of local energy work group	seeing the existing energy-neutral efforts, decided to implement the same measures. Consequently, none of the homes in this area use gas.
8	Initiator	Age unknown but retired, Male	Retired but was owner of a company	Person lives in the city center; east part of Lochem. The neighbourhood is diverse, featuring a mix of different houses. The population is varied, with a significant portion over 60 and many families with children, typically moving in from age 30 onward. Since 2020, there has been movement, with many residents selling their homes to newcomers, primarily from the western and northern parts of the Netherlands. These newcomers often do not integrate into the community.
9	Initiator	52 years, Female	Non-medical practitioner	The area is sparsely populated and widely spread. The community is rather close-knit and evolving from its traditionally old-fashioned ways of keeping contact. Younger residents are introducing new ideas, favoring more freedom and less rigid social routines. Annual events include a community bike ride and gatherings, such as New Year's celebration.
10	Initiator	61 years, Male	Economist, working for a large engineering company; Volunterring at the community council of his village	The village is characterized by fragmented infrastructure. Long-time residents, often relatives with strong historical ties, maintain close-knit connections within their community. In contrast, newer residents often have professions elsewhere, limiting integration. Despite that, there are various community activities including sports clubs, music orchestras, and community gatherings at a large community center, primarily attended by long-standing residents and their descendants.
11	Follower	78 years, Female	Unknown	The neighborhood features two types of housing: larger standalone houses and rows of smaller houses grouped in blocks with gardens in front and behind. It's a green area where residents show interest in sustainability, with larger houses equipped with solar panels and better insulation compared to the older, less insulated houses from the 1960s. Despite the housing differences, neighbors know each other and occasionally participate in activities together, such as going to the gym or having coffee. Residents maintain communication through WhatsApp groups, with occasional gatherings like barbecues and year-end meetings. Residents inform each other about vacations to watch over their homes.
14	Early-Adopter	Age unknown but retired, Male	Environmentalist, started own company; Energy	The neighborhood consists of widely spread, spacious houses predominantly occupied by retirees such as ex-doctors, pilots, and veterinarians, all highly educated individuals. Once a year, residents gather for a street neighborhood party

			trainer for local energy corporation	
15	Initiator	28 years, Female	Sustainable Finance Officer at the Dutch Central Bank; Chair of a local sustainability center	In the community, they organize annual events such as New Year's gatherings. These are however often centered around families with children attending the local primary school. Overall, the community tends towards individualism rather than a closely-knit, interconnected community where everyone is deeply familiar with each other and shares collective responsibilities. This differs from neighboring areas where communal activities are more prevalent, potentially influenced by the arrival of residents from other regions of the country.
16	Initiator	60 years, Male	Working at the local welfare organisation	In the neighborhood, there is a high level of community engagement. Residents on the same street regularly organize events such as parties and birthdays, and collaborate on constructing a car for the annual village festival parade. Despite the village's small size, approximately one thousand inhabitants, there is a robust collective participation in various communal activities. The community exhibits a strong ethos of mutual assistance, where neighbors readily help each other with tasks like lawn care, tool lending, pet care, and errands, fostering a supportive environment for residents of all ages.
17	Follower	60 years, Male	Retired; Former engineer	The residential area is characterized by affluent households situated in a forested environment, with spacious properties featuring large houses. Interaction among neighbors occurs occasionally, although community engagement is limited, resulting in a relatively inactive communal environment.
18	Follower	74 years, Male	Doctor; Energy coach for LochemEnergie	The compound comprises 10 to 11 houses designed primarily for elderly residents, although there are also younger occupants. Residents of the compound are part of a community, which fosters a nice atmosphere. However, there are no organized collective activities within the compound.
19	Follower	71 years, Male	Worked as English teacher for 21; Worked in IT for 25 years	It's the older district of Lochem, characterized by spacious properties, including numerous large villas spread out over a wide area. The neighborhood is affluent, with a concentration of older, rich residences. Residents gather for neighborhood parties, fostering social interaction among the inhabitants.
20	Follower	76 years, Male	Biologist, Focused on restoring antiques and furniture past 12 years	There is active communication via WhatsApp groups both in the neighborhood and among nearby residents. Occasionally, there are informal barbecues where people socialize. Mutual assistance is common, with neighbors readily helping each other out

				when needed. The gatherings also include celebrations like birthdays, fostering frequent interaction and community engagement.
22	Non-Participant	59 years, Female	Secretary in customer service	The neighborhood consists of detached houses. There is a friendly atmosphere among residents. They have a culture club and frequently attend theater outings together. Additionally, the neighbours sometimes celebrate special occasions like birthdays.
23	Non-Participant	41 years, Female	Works in real estate with social rental houses for people with lower incomes	In the row of houses, there are many elderly women who live alone, having been residents since the houses were built in the 80s. Over the years, some younger individuals have also moved in, but overall, there are few children in the area. Thee is some interaction and support among neighbors, like assisting each other with package deliveries. Communication with other residents is limited, although immediate neighbors speak more.
24	Non-Participant	46 years, Male	Works as tenant at the transporting system operator for electricity in the Netherlands; being responsible for the offshore station scope	There is a neighborhood committee that organizes various activities for the community. Additionally, there is a group responsible for maintaining the green areas within the neighborhood. These initiatives contribute to a well-connected community environment.
25	Non-Participant	53 years, Female	Studied international law; Started own HR consultancy around talent and talent management, talent development in a global setting	The neighborhood has an established sense of community. As newcomers, the interviewee and her family are sometimes seen as "imported," partly due to being an English-speaking household. Interactions with neighbors are friendly but not deeply intense. They stay informed about neighborhood events through Whatsapp groupd, including occasional barbecues. Their location on the border places them in two neighborhood communities, where they occasionally receive invitations from both sides. Long-time residents have strong connections and regularly interact, whereas this persons busy work schedule and non-traditional family setup mean that her family engages less frequently in neighborhood social activities like coffee chats.

Appendix B

Interview Scheme for a Semi-structured Interview with Initiators, Early Adopters and Followers

Introduction:

- Introducing myself, the purpose of the interview, and my overall research
- Asking for oral consent, explain voluntary aspect of participation and ask for consent to record the audio
- Building rapport

Demographics of Participants/ Type of Neighbourhood:

- Age
- Occupation
- Since when they live in the neighbourhood
- With whom they live (household size)
- What area they live in
- Size of neighbourhood

Sense of Community:

- If any, what kinds of collective activities have been organized by your neighbourhood before starting the LE neighbourhood approach?
- What is the relationship between neighbours like?
- How would you describe the level of support among neighbours in your neighbourhood?
- Can you share examples in which your neighbourhood collaborated on the energy transition?
- Do you feel a sense of belonging to a larger community through your involvement with LochemEnergie?

Awareness and Engagement in Neighbourhood Approach/ Motivators:

- How did you first get to know LochemEnergies neighbourhood approach?
- What motivated you to participate in the neighbourhood approach?
- What did you hope to achieve by joining the LochemEnergie neighborhood approach? What were you looking forward to, or what did you expect from being involved?
- What factors or motivations encourage residents to participate in the neighbourhood approach?
- Did you motivate other people to join?/ Was it successful to motivate other people?
- How did you try to motivate your neighbours/ other people?
- Can you describe the motivation level of your neighbours in the beginning of the LE neighbourhood approach? How is it now?

Social Cognitive Theory

- Are there individuals in the community who are considered role models for sustainable living, and how might their behaviour impact others?

Social Identity Theory/ Shared Identity:

- How do you feel about being part of your neighbourhood? How does living here impact the way you act?
- How does being a part of your neighbourhood influence how people work together on projects like LochemEnergie's neighbourhood initiatives?
- Do you think there are shared values or goals that you believe contribute to the success of the neighbourhood approach?

Norms and Influence:

- What are your neighbours' attitudes towards green energies and sustainable behaviours?
- Are there any shared beliefs/wishes/expectations among neighbours regarding sustainability?
- Is there some kind of social pressure within your neighbourhood to adopt sustainable behaviours, and how does this impact individual choices?
- Could you name examples of sustainable behaviours you've seen in your neighbourhood? Does this influence your own behaviour?
- Have you observed any commonly accepted behaviours related to sustainability within your neighbourhood?
- How does the involvement of your neighbours affect your own involvement with LE neighbourhood approach?

Learning from Best Practices and Suggestions:

- Are there any barriers or obstacles preventing others from getting involved? How could these barriers be addressed effectively?
- Do you know/ Have you visited other renewable energy projects?
- What challenges, if any, have you encountered in participating in LochemEnergies neighbourhood approach?
- Based on your experience, what recommendations do you have for improving or expanding the neighbourhood approach?
- How can LochemEnergie work on involving more residents in sustainable practices?

Closing:

- Is there anything else you would like to share regarding your experience with the neighbourhood approach?
- Thanking the participant for their time and insights

Appendix C

Interview Scheme for a Semi-structured Interview with Non-Participants

Introduction:

- Introducing myself, the purpose of the interview, and my overall research
- Asking for oral consent, explain voluntary aspect of participation and ask for consent to record the audio
- Building rapport

Demographics of Participants/ Type of Neighbourhood:

- Age
- Occupation
- Since when they live in the neighbourhood
- With whom they live (household size)
- What area they live in
- Size of neighbourhood

Awareness and Decision Not to Participate:

- How did you become aware of LochemEnergie's neighbourhood approach?
- What were the factors that led you to decide not to participate in the neighbourhood approach?
- What were your expectations or concerns that influenced your decision not to join?
- What, in your opinion, are the factors that may dissuade residents from participating in the neighbourhood approach?

Sense of Community and Relationship Dynamics:

- Have there been any collective activities organized by your neighbourhood before the introduction of the LochemEnergie neighbourhood approach?
- How would you describe the relationship between neighbours?
- What is your perception of the level of support among neighbours in your neighbourhood?
- Can you recall any instances where your neighbourhood collaborated on initiatives similar to LochemEnergie's neighbourhood approach?

Social Influence and Identity:

- How do you perceive your role within your neighbourhood, and how does it influence your decision-making?
- How do you think being part of your neighbourhood influences collaborative efforts on projects like LochemEnergie's initiatives?
- Do you believe there are shared values or goals within your neighbourhood that may affect participation in the neighbourhood approach?

Norms and Influence:

- What are your observations regarding your neighbours' attitudes towards green energies and sustainable behaviours?

- Are there any prevalent beliefs or expectations within the neighbourhood regarding sustainability?
- Have you felt any social pressure within the neighbourhood to adopt sustainable behaviours, and how does this influence individual choices?

Learning from Best Practices and Suggestions:

- What barriers or obstacles do you perceive that may prevent others from participating, and how could these be addressed?
- Have you had any exposure to or knowledge of other renewable energy projects?
- From your perspective, what challenges might residents encounter in participating in the neighbourhood approach?
- What suggestions do you have for improving or expanding the neighbourhood approach?
- How do you think LochemEnergie could engage more residents in sustainable practices?

Closing:

- Is there anything else you would like to share regarding your experience with the neighbourhood approach?
- Thanking the participant for their time and insights