Interventions for an inclusive energy transition in Amsterdam Zuidoost

An ethnographic research on inclusivity of the LIFE project.

June, 2022, Amsterdam

Alisa van Gent
Student number: 971215256050
First supervisor: Bas van Vliet Wageningen University and Research (WUR), Environmental Policy
Second supervisor: Abhigyan Singh Technical University (TU) Delft, Faculty of Industrial Design Engineering

TU Delft Delft University of Technology

WAGENINGEN UNIVERSITY & RESEARCH

AMS AMSTERDAM INSTITUTE FOR ADVANCED METROPOLITAN SOLUTIONS

“The hard truth is that development must start from within the community and, in most of our urban neighbourhoods, there is no other choice.”

John McKnight & John Kretzmann, 1996, p.25

Abstract

In order to overcome the existential threat of climate change the energy transition is needed. The energy transition has multiple challenges, one of them being that it risks increasing inequality. This challenge also occurs in Amsterdam Zuidoost. In Amsterdam Zuidoost almost one out of five households lives already in energy poverty, which risks to increase due to the energy transition. The LIFE project, located in Amsterdam Zuidoost, aims to reduce energy poverty and contribute to the transition towards clean energy. LIFE is an acronym for Local Inclusive Future Energy. The aim of the project is to stimulate smart energy use which enables flexibility of the local energy system. To ensure meaningful interaction between future users and the design of the project, this research aims to develop a framework that presents the conditions for interventions that contribute to a more inclusive energy transition in Amsterdam Zuidoost. For this research, inclusivity is conceptualised as the active involvement of citizens in the energy transition. This means that an open door policy is not enough, inclusion is a reflexive process in which the competences and desires of the excluded are put at the centre. The data collection method consisted of an exploration of the literature, ethnographic research in Amsterdam Zuidoost and an analysis of transcripts of interviews with key-informants. This led to a framework consisting of nine conditions for interventions for an inclusive energy transition. The established conditions are the following agency, identification of the community, skill development, multi-objectivity, the need for safety, communication methods, practical examples, lightheartedness and youth. These conditions were found to emphasise, ensure or stimulate the inclusivity of the interventions for the energy transition. The different conditions are heavily interlinked and are able to stimulate each other. Intentional participatory observations led to the suggestion of interventions that align with the found conditions. Some suggested interventions are a pop-up park, energy desk, training on how to save energy, heat photos, smart meters and energy classes at schools. These suggested interventions meet some of the conditions of the established framework, and therefore aim to contribute to a more inclusive energy transition in Amsterdam Zuidoost. Finally it is recommended to evaluate the outcome of the different intervention and compare those for further steps. Also investigating if the framework is applicable to other neighbourhoods or other types of transition might be of value.

Keywords: *inclusivity, energy transition, inclusive energy transition, Amsterdam Zuidoost, inclusive interventions, energy poverty*

Table of Contents

List of Figures

List of Tables

List of Boxes

Personal reflections of the researcher

The process of this research has given me various insights on inclusion, the energy transition, transitions and life in general. The freedom that comes with individual research was often a perk more than a burden. I loved the fact that I could steer the research in the directions of my interests, develop my own ideas and beliefs on the topic and apply a methodology I have not used before. Sometimes I did find it hard, since there were a lot of involved parties, to stick to my own message. I couldn't have done this research with the people that stand close to me, my supervisors: Abhigyan Singh & Bas van Vliet, my co-workers at LIFE and Tertium and all the wonderful people I was able to meet during my fieldwork, many thanks to all of you.

List of Abbreviations and Acronyms

ABCD	Asset Based Community Development
LIFE	Local Inclusive Future Energy
GRQ	General Research Question
SDG	Sustainable Development Goal
SES	South East Stars
SNAP	Sustainable Neighbourhood Action Program
SRQ	Sub Research Question
UN	United Nations

Chapter 1: Introduction

To combat the existential threat of climate change, Europe's goal to be the first climate-neutral continent by 2050, this is ambitious but necessary (Weijnen et al., 2021). This ambition is shared by the United Nations (UN), since the Sustainable Development Goal (SDG) 7 states: "Ensure access to affordable, reliable, sustainable and modern energy for all" (UN, 2022).

The exploitation of non-renewable energy resources were the driving force in past energy transitions, with little eye for social and environmental consequences. Next to that, they are described as top-down, a limited number of corporate actors controlling highly centralised energy systems (Lennon et al, 2019). Decentralisation of energy systems plays an important role in the current transition towards renewable energy. Decentralisation can be seen not only on a technical level, with locally produced energy and omnipresent data collecting and sharing. Also on a social level, decentralisation can be found. By opening up to local initiatives the engagement of the energy user is supported (Deconinck, 2021). The transition towards renewable energies is therefore in theory more likely to include social groupings directly (Lennon et al, 2019).

The transition to clean energy has the potential to reduce the total costs of the energy system (Van den Brink & Faaij, 2019). Due to investments in new technologies this cost reduction will not happen linearly over time. Thus, in the short and medium term the energy transition will lead to higher energy cost (TNO, 2020). On a household scale this means that investments are needed to shift to a different energy source, for example the installation of a heat pump instead of gas. International research shows that sustainable energy technologies, like electric vehicles, solar panels, efficient appliances and LED light bulbs, are often only used by higher-income households (Carley & Konisky, 2020). Vergeer et al. (2017) found that in the Netherlands households with a low socio-economic class spend a relatively higher percentage of their income on energy measures, compared to households from a middle or high income. So, in practice, research already shows that the costs and benefits of the energy transition are not equally shared.

The energy transition risks increasing social inequality even more (Borenstein & Davis, 2016). Necessary investments in sustainable technology for the energy transition may increase energy poverty. Energy poverty means that a household does not have sufficient access to modern energy services at home (TNO, 2020). People in energy-poor households may therefore decide to not warm up their food or turn on heating or cooling in order to save money. For the last mentioned reason, extreme weather conditions will have a bigger impact on households living in energy-poor households. Energy poverty can affect physical and mental health, social life and employment opportunities of people who are affected by it. A multitude of factors play a role in explaining energy poverty; family income, education level and other socio-demographic factors but also poorly insulated homes, energy prices and taxes (TNO, 2020).

Around 550.000 households in the Netherlands live in energy poverty, this is 7% percent of all households in the Netherlands (Mulder et al., 2021). The highest percentage of energy

poverty in Amsterdam, can be found in the neighbourhood Bijlmer. In Bijlmer, in the South East of Amsterdam, 19% of households live in energy poverty (TNO, n.d.).

1.1 Research Arena

The role of local renewable energy projects in which local households are engaged, raising social acceptance for the energy transition, has grown in the last two decades in Europe (Hanke et al., 2021). A decentralised energy systems initiative is the LIFE project in Amsterdam Zuidoost. LIFE is an acronym for Local Inclusive Future Energy.

1.1.2 LIFE

Amsterdam Zuidoost strives to be energy neutral by the year 2040 (Nawaz et al., 2021). The developments in Amsterdam Southeast were seen as opportunities to combine sustainability ambitions with poverty reduction and social improvement, for that reason Energy Lab Zuidoost was initiated (AMS institute, 2021). Realising this so-called 'social energy transition' is done by means of living labs. The European Network of Living Labs defines living labs as "user-centred, open innovation ecosystems based on a systematic user co-creation approach in public–private–people partnerships, integrating research and innovation processes in real life communities and settings" (ENoLL, 2016). Energy Lab Zuidoost focuses on three main cases: the sustainable renovations of homes in Reigersbos, low temperature heat networks in Amstel III and local smart energy systems at Amsterdam ArenaPoort (see figure 1).

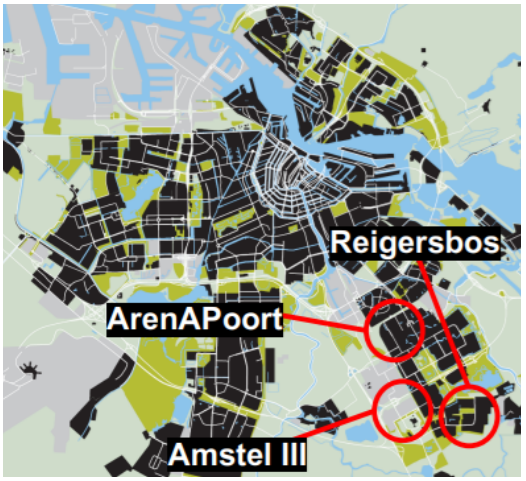

Figure 1: Locations of Energy Lab Zuidoost

ArenApoort is a unique place because of its dynamic features. It enhances neighbourhoods for living, a shopping centre, an office area but also large scale event centres like a football stadium and a concert hall. It can have over 250 000 visitors on a day. This leads to enormous peaks in energy demand and net congestion. Congestion occurs when the demand for transmission capacity exceeds the available capacity in the grid. The opportunity lies in smart collective energy sharing of households and local businesses to mitigate the risk of congestion of the energy net. The LIFE project aims to stimulate smart energy use which enables flexibility of the local energy system. Central in the project is the 'Johan Cruijff

Arena' with its solar panels and a battery of 3MWh that can store the surplus of produced energy (Nawaz, 2021).

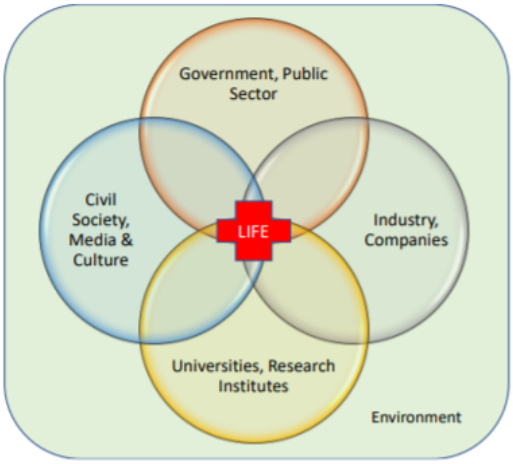

Figure 2: Living Lab Stakeholders

Also in relation to its stakeholders, LIFE is a unique project. Since LIFE functions as a living lab a multitude of stakeholders are involved in the project such as Johan Cruijff Arena, Spectral, Liander, CoForce. Living lab stakeholders can be identified as users, private actors, public actors and knowledge institutes (Steen & Van Bueren, 2014). As can be seen in figure 2, LIFE locates itself at the heart of all living lab stakeholders.

To ensure the project being inclusive as the name suggests, a "Stakeholder Engagement and Inclusion Plan" is in development for meaningful interaction between future users and the design of the project. Therefore this research explores the different ways of engagement with the inhabitants focused especially on inclusivity.

1.1.2 Venserpolder

Venserpolder is located in the Bijlmer, the northwest of the Southeast district of Amsterdam. In 2021, the Venserpolder neighbourhood counted 8.499 inhabitants. The area is around 82 ha. and counts over 4500 dwellings, see figure 3. 50-60% of the buildings are cooperative property (Gemeente Amsterdam, 2020). De Alliantie, De Key, Ymere, Stadsgenoot and Eigen Haard are the housing corporations in Venserpolder. The area is mainly focused on living but there is a small shopping centre. Also there are 4 schools in the neighbourhood, a health-care centre, 4 community centres, a care and nursing home and some day care centres.

In Venserpolder around 20% of the households have a low income, lower than €9.249. This percentage is high compared to the rest of the Netherlands, 8%. Next to that, 10% of the households receive social assistance benefits, which is more than twice as much as the average in the Netherlands, 4% (CBS, 2021). These numbers are being reflected in the debt counselling in the area. Long term minima in Venserpolder is 19% on average while in Amsterdam this is 11%. In terms of energy in the Venserpolder the average gas and electricity use is two thirds of what the rest of the Netherlands uses. In the area 70% of the inhabitants have non-western background, of which 30% is Surinamees (CBS, 2021).

The Gemeente Amsterdam identified the neighbourhood as an ‘ontwikkel buurt’ (development area) due to social problems, like poverty, health problems and vulnerable youth. The Gemeente Amsterdam aims to put its emphasis, amongst others, on the following points in Venserpolder: poverty reduction, development opportunities for vulnerable youth, tackling criminality, improve mental and physical health (like obesity, loneliness and mental issues) and the increase of social cohesion (Gemeente Amsterdam, 2020).

Figure 3: Venserpolder

1.1.3 Research Gap

This introduction underlines the importance of an energy transition in Amsterdam Zuidoost that is beneficial for all inhabitants. To exemplify this, it is described that on one side of the train line the battery of Johan Cruijff Arena can store enormous amounts of energy, on the other side of the railway inhabitants of Venserpolder suffer from energy poverty. On the basis of this lies the need for efficient use of renewable energy sources in order to meet regional, national and international sustainability goals. LIFE aims to develop a local inclusive future energy system with the focus of real engagement of residents instead of smart technology, but the ‘how’ is not clear yet. Therefore this research aims to develop a framework of conditions that have to be met for interventions that contribute to an inclusive energy transition in Amsterdam Zuidoost.

1.2 Research questions

This research aims to learn from the theory and practice for the development of a local inclusive future energy system. With regards to theory, literature is explored for the conditions of interventions for an inclusive energy transition. Empirical data is collected by studying local developments and the bottom-up initiatives in Venserpolder and its further surroundings in Amsterdam Zuidoost. The results of the theoretical and empirical studies will be analysed in the last research question, to formulate possible suitable interventions. This is done to reach the research objective: **to develop a framework of interventions for the LIFE project that contribute to a more inclusive energy transition in Amsterdam Zuidoost.**

General Research Question (GRQ)
What are the conditions for interventions that can contribute to a more inclusive energy transition in Amsterdam Zuidoost?

Sub Research Questions (SRQs)
SRQ1: What conditions of interventions for an inclusive energy transition can be drafted from theory?

SRQ 2: What conditions of inclusive interventions can be drafted from empirical data collected in Amsterdam Zuidoost?

SRQ3: Considering the conditions of interventions for an inclusive energy transition found in SRQ1 & SRQ2, what specific interventions can contribute to a more inclusive energy transition in Amsterdam Zuidoost?

1.3 Readers guide

This section gives a short overview of this thesis. In the next chapter the methodology that is used to reach the research objective is described. The conceptualization of inclusion, an inclusive energy transition and interventions for an inclusive energy transition can be found in chapter 3. An exploration of literature is done in order to find conditions for interventions, these results can be found in chapter 4. In chapter 5 the cases that have been studied during the ethnographic fieldwork are described. The chapter that follows describes the findings of the fieldwork and the analysis of the interviews. Chapter 7 contains a list of possible interventions categorised per condition. The discussion and the conclusion of this research can be found in chapter 8 & 9.

Chapter 2: Research methodology

In order to reach accurate and complete answers to each research question, the triangulation method is applied as this allows cross-checking data from multiple sources to search for regularities in the research data (O'Donoghue & Punch, 2003). The following methods are being applied: literature review, ethnography and interviews. An overview of the different used methods can be found in table 1.

Table 1: Overview research questions and methodology

SRQ	**Knowledge to obtain**	**How?**
1	Conditions of interventions for an inclusive energy transition (theory)	Exploration of the literature
2	Conditions of interventions identified in practice (empirical)	Ethnography entailing: - Participant observation - Action research Interviews with key informants
3	Possible interventions for the LIFE project (analysis)	Exploration of the literature Ethnography entailing: - Participant observation - Action research Interviews with key informants Intentional participatory observations

2.1 Exploration of the literature

The literature was explored in order to find conditions of interventions for an inclusive energy transition. The snowballing method (Wohlin, 2014) was used for the research in order to find relevant literature on the topic. This means that the exploration of the literature began with some starting points like the searching terminology in box 1 and by reading scholars that were mentioned in the intentional participatory observations (described in section 2.4). The searching terminology was used for search engines like *"Google Scholar"* and *"WUR Library Search"*. In the obtained articles references were made to other scientific articles which were used until the point of saturation was reached, thus when no more new conditions were found. Different conditions of interventions for an inclusive energy transition were analysed and clustered for the purpose of this thesis.

Box 1: Searching terminology to start the snowballing method

*Energy Transition * Renewable Energy Community * Inclusive Energy transition * Barriers for an Inclusive Energy Transition * Inclusivity * Transition management * Public Engagement * Urban Transitions * Interventions in the Energy Transition * Socio-energy*

2.2 Ethnography

The second research question will be answered by means of ethnography. In Gusterson (2008) ethnography is being referred to as ‘deep hanging out’. Ethnography is a research approach which traditionally has been used to understand different cultures (Tacchi et al, 2003). Ethnography puts high emphasis on respect and privacy of the participants (Gusterson, 2008; Tacchi et al, 2003). Consent on the research is needed from all parties, for that reason is chosen for an overt approach. This means that the researcher openly states their intentions and acknowledges her role as a researcher to the members of the group being studied. Since the boundaries of participants are leading for the research design, the method is flexible (Gusterson, 2008). Ethnography is a well known approach to energy challenges, like energy poverty in Amsterdam Zuidoost. By means of ethnography it is aimed to understand how the inhabitants of Zuidoost make sense of the world instead of immediately moving to a position of judgement (Cross, 2019; High & Smith, 2019). For this research an approach of team ethnography is used in the following section this method is described.

2.2.1. Team ethnography

For the LIFE project a team of researchers, see table 2 for the team, have been doing ethnographic research. This research consisted of several field visits, the times, dates and activities of the field visits can be found in annex 1. All field visits took place in Amsterdam Zuidoost. During the field visits active participation in activities took place in several neighbourhood community centres and other initiatives in Zuidoost. These different case studies are described in chapter 5. The field visits are documented in fieldnotes. These fieldnotes follow the format that can be found in annex 2. Fieldnotes of field visits that took place between 17-11-2021 up to 21-6-2022 are used as data for this thesis.

Table 2: Team ethnography members

Researcher	**Research**	**Field of Study**	**Faculty**
1	MSc Thesis	Design for Interaction	TU Delft
2	PhD	Industrial Design	TU Delft
3	Msc Thesis	Industrial Design Engineering	TU Delft
4	Msc Thesis	Metropolitan, Analysis, Design & Engineering	TU Delft & WUR

2.2.2 Data Analysis

The web program ATLAS.ti, developed by ATLAS.ti Scientific Software Development GmbH (2022), has been used as a coding software to analyse the fieldnotes. In this program code and sub-code can be created and therefore the program was crucial for the analysis of the fieldnotes. The method of coding was inductive which transformed empirical data into themes and concepts with a higher abstraction level. The latter ones are used to answer the research questions.

2.3 Interviews with key-informants

During the execution of this thesis the researcher did an internship at a participation consultancy named Tertium. At this company also two other interns were executing research on an inclusive energy transition in Amsterdam. Both interns were students, one MSc sociology student from Vrije Universiteit and one graduate student from the University of Humanistics in Utrecht. Between the students some data was shared amongst each in order to execute all research in the most complete way possible.

For this thesis the transcripts of four interviews on the topic of an inclusive energy transition were analysed. The interviews were conducted between January 2022 and May 2022 and all interviewees were key-informants in Amsterdam Zuidoost. The transcripts of these interviews have been analysed by the coding system Atlas.ti, see next section (2.3.2) for more information on this. An overview of these interviews can be found in table 3. The data has been used to confirm the found conditions in theory and/or ethnography.

Table 3: Overview of analysed transcripts of interviews with key-informants

Interview	**Function of key informant**
1	Participation strategist on the energy transition currently working in Amsterdam Zuidoost
2	Founder of inclusive centre located in Holendrecht, Amsterdam Zuidoost
3	Active and political involved inhabitant in Amsterdam Zuidoost
4	Technician and board member of the Taibah Mosque, Kraaiennest, Amsterdam Zuidoost

2.3.2 Data Analysis

The web program ATLAS.ti, developed by ATLAS.ti Scientific Software Development GmbH (2022), has been used as a coding software to analyse the interviews. The created coding that arose during the coding of the fieldwork is used to analyse the interviews and new coding originated. This was used to answer the research questions.

2.4 Intentional participatory observations

In order to get a better understanding of the topic of the energy transition and inclusivity several research activities took place. For these research activities the researcher joined a multitude of events on the topic happening in the Metropolitan Region of Amsterdam (MRA) or online. In some events the role of the researcher was passive, as an observer or listener, while in other events the researcher took an active observant role in the event. For a full overview of these events, see table 4. The data that was gathered during these events was used to answer SRQ3. These are described as intentional participatory observations that were executed outside the scope of Amsterdam Zuidoost.

Table 4: Overview of intentional participatory observations

Date	Activity	Organiser	Role researcher	Location
14-2-2022	Watch documentary: De Vrouwen van Venserpolder	HUMAN	Observer	Online
2-3-2022	Acquaintance employee Greenchoice	Researcher	Active participant	Online
2-3-2022	Interview Marjolein Minnesma about inclusive energy transition	Tertium	Observer	Pakhuis de Zwijger, Amsterdam
10-3-2022	Congres: Ronde 1 | 4. Betere wijken dankzij de energietransitie	Project Aardgasvrije Wijken (PAW)	Observer	Online
16-3-2022	Serious Game: stakeholders in de energietransitie	Servicepunt Duurzame Energie	Active participant	Provinciehuis, Haarlem
24-3-2022	Workshop by actors for 4 VWO classes about conversations about energy savings	Tertium & Weesp Duurzaam	Observer	Vechtstede college, Weesp
22-4-2022	Redesigning Ownership with Kate Raworth and Marleen Stikker	Pakhuis de Zwijger	Observer	Online
2-5-2022	Together We Design: Making Tangible Impact	Pakhuis de Zwijger	Observer	Online
10-5-2022	Presentation: Inclusive Energy Transition in Amsterdam	02025 & Tertium	Presenter	Weteringschans, Amsterdam
7-6-2022	Presentation: Interventions for an Inclusive Energy Transition Amsterdam Zuidoost	LIFE	Presenter	De Entree, Amsterdam

Chapter 3: Conceptualization

This chapter describes the theoretical foundation of this thesis. The terms inclusion, inclusive energy transition and interventions for an inclusive energy transition are conceptualised.

3.1 Inclusion

The term exclusion is the antonym of inclusion, to get a better understanding of the meaning of inclusion both terms will be explored in the following section.

According to Sen (2000) ex- and inclusion is about access to and participation in opportunities and activities, he puts his emphasis on vulnerable citizens and social groups. Van Houten (2008) defines inclusion as that all citizens can participate in all facets of society in their own way, this aligns with the UN's definition of an inclusive society. In 1995, the United Nations (UN) defined an inclusive society in 1995 as “a society for all” in which every individual, each with rights and responsibilities, has an active role to play (UN, 1995). An inclusive society is equipped with mechanisms which accommodate diversity, and facilitate and/or enable people’s active participation in their political, economic and social lives. Such societies foster mutual trust, a sense of belonging and interconnectedness. According to Van Houten in practice this means that inclusion is being worked on systematically, in a society anchored manner. This is a time consuming process in which the competence and desires of the excluded should be centralised (Van Houten, 2008).

The UN defined social exclusion as “a state in which individuals are unable to participate fully in economic, social, political and cultural life, as well as the process leading to and sustaining such a state” (UN, 2016). Measuring social exclusion is challenging because of its multidimensional nature and the lack of data that allows a meaningful analysis. On top of that, exclusion is, after all, a personal experience and the views of those affected by it or at risk of being left behind cannot be disregarded (UN, 2010).

As mentioned earlier, inclusivity is also closely tied to the concept of diversity. According to Harrison et al. (1998) there are multiple dimensions of diversity. So it is mentioned that diversity can be found on a surface level as well as a deeper level. *Surface level diversity* can be found in the form of characteristics of individuals that are readily visible such as age, sex and ethnicity. *Deeper-level diversity* can be found in characteristics that are non-visible, such as attitudes, values, knowledge and skills (Harrison et al., 1998). Important to mention here is that, when aiming for diversity, there is the pitfall for essentialism (Van Houten, 2008). Phoenix (1998) introduced essentialism as reducing individuals to only one of their characteristics. In example this would mean that a person is only seen as a woman, or a person of colour instead of an individual with a range of different characteristics and qualities.

There are multiple understandings of inclusion. A distinction can be made between actively working on inclusion and passive inclusion. Passive inclusion entails adopting an open door policy which in practice means to remain equally open and welcoming to everyone (Grossmann & Creamer, 2017). Although this complete openness has an obvious appeal,

this might not lead to the most inclusive form of participation (Fung, 2016). In a process that is open to all, the public is self selecting. In practice this means that individuals that are wealthier and better educated or have a special interest or strong view, tend to participate more than those who don't have these advantages or interests (Fiorina, 1999). To address this difficulty Fung (2019) proposes to select participants from subgroups that are less likely to engage. An example of this is employing community organisers to publicise meetings in low-income and minority communities. Another way is providing structural incentives that are attractive to those who are normally less likely to participate. Randomly selecting participation from among the population guarantees equal representativeness the most (Fung, 2019). So, interventions that actively select participants from the public that are less likely to participate can be identified as active inclusion.

Thus inclusion is a process in which the wishes and desires of the excluded need to be centralised. To be called inclusive, an open door policy doesn't stand, there needs to be actively worked on creating diversity on deeper-level and surface-level. Random sampling from the population guarantees equal representativeness the most for participation.

3.2 Inclusive energy transition

The term inclusion has just been introduced, but what does inclusion mean with regards to the energy transition? This will be conceptualised in this section.

As Ursula von der Leyen put it, upon her presentation of the European Green Deal, it is all about a transition that is just and socially fair (Weijnen et al., 2021). According to Hopkins (2011) inclusion is essential for successful transitions (Hopkins, 2011). Grossmann and Creamer link the importance of inclusivity and diversity in transitions to resilience (Grossmann & Creamer, 2017). Resilience refers to the ability to absorb and adapt to change and disturbance (Graugaard, 2012). "An active, community-based, internally-driven and holistic approach that should, in theory, provide greater protection against external shocks" (Barr & Devine-Wright, 2012, p. 526). This suggests that inclusivity and diversity can increase the resilience of a community.

Diversity of participants in citizen-led initiatives is low in the Netherlands. Participants of studied citizen initiatives were predominantly white, retired, higher educated men (Odekerken et al., 2020; Van Hulst et al, 2016). Also as stated in the introduction the energy transition still risks increasing energy poverty. In the energy transition's inclusivity is a challenge. In energy literature the higher objective of an inclusive energy transition is ensuring the availability of sustainable, reliable and affordable energy services for all members of society (Weijnen et al., 2021). Reasoning that energy is essential for nowaday's economy and society, having access to energy is crucial for the wellbeing and welfare of each citizen. While the energy transition itself, mentioned in the introduction, is an enormous challenge considering production, infrastructure and distribution of energy, the real challenge lies in leaving none behind (Weijnen et al., 2021).

So for this conceptualization an inclusive energy transition means ensuring the availability of sustainable, reliable and affordable energy services for all members of society. Additionally, taking into account earlier statements on inclusion, it means actively working on creating an

inclusive transition, in which there is a rich diversity, both on surface and deeper level, in all facets of the transition.

3.3 Interventions for an inclusive energy transition

In this thesis the word intervention has already been mentioned a couple of times. But what does the word ‘intervention’ exactly entail and how does it relate to the energy transition? These questions will be answered in this section.

The word intervention can be linked back to the Roman empire. In Latin ‘inter’ means ‘between’, while ‘venire’ is the verb for coming. So literally translated an intervention is the action of ‘coming in between’. The latin language also features this verb as ‘intervenire’ and the noun ‘interventio’. The latter translates itself as intervention. In order to ‘come in between’ there needs to be a situation or place to intervene with, also there needs to be an entity to execute the intervention. In day to day practise an intervention is understood “as goal-oriented interfering in a course of events to promote a preferred state; usually defined by an external force…” (Halse & Boffi, 2020, p. 2).

In the context of this thesis the focus lies on social interventions, since the topic of inclusion is a social one. Social interventions are actions by a public or private organisation which affect social affairs with the purpose of changing; “an alternation of the social structure” (McClelland, 2005, p. 481). Movisie developed a dutch database with effective social interventions. Movisie is a national knowledge institute for a coherent approach to social issues (Movisie, 2022). According to Movisie a social intervention needs to meet the following two conditions. First, the intervention is aimed at an improvement of the end position of the target group (Smid, 2021). Secondly, the goal and the implementation of the intervention can be carried out in the social domain. The social domain is very broad, it contains the domain of social pedagogy, social work, community and organisational development, adult education, local social policy and different sectors of care (e.g. youth care) according to the Journal of Social Intervention: Theory and Practice (2022) published by the Rotterdam University of Applied Sciences. According to Spolsky (2004) a social domain is any defined or definable social, religious or political group or community ranging from family to a sports team (Spolsky, 2004). More broadly speaking a social domain is the social and linguistic context for a society defined by three dimensions; location, participants and the topic (Fishman et al., 1971). So in the perspective of the just defined dimensions of the social domain, the specific social domain this thesis aims to find conditions of interventions for is Amsterdam Zuidoost, its inhabitants on the topic of an inclusive energy transition.

So to summarise this chapter, inclusivity is a process in which the competences and desires of the excluded are put at the centre (Van Houten, 2008). This process actively works on diversity on both surface and deeper-level in all facets of the transition. An intervention is goal-oriented alternation aiming for an improvement in the social domain. The social domain in this thesis entails Amsterdam Zuidoost, its inhabitants, on the topic of an inclusive energy transition. In this thesis the term *‘interventions for an inclusive energy transition*’ is used to identify interventions that emphasise, ensure or stimulate the inclusivity of the energy transition.

Chapter 4: Exploring the literature

For this chapter the literature is explored in order to capture conditions of interventions for an inclusive energy transition. The conditions have been found by means of an exploration of the literature for which the searching terminology in box 1 (chapter 2) is used. The articles were analysed for different conditions of the interventions for an inclusive energy transition, these were clustered. This process led to the following categorisations of four conditions: agency, identification of the community, skill development and multi-objectivity. As the chapter describes, these conditions are interlinked and influence each other. The literature review continued, according to the snowballing technique, until a point of saturation was reached and no new information was found (Wholin, 2014).

4.1 Agency: local ownership

Several scholars stress the importance of local agency, responsibility and ownership for an inclusive energy transition (Heffron, 2021; Lennon et al, 2019; Uyterlinde, 2022). To understand the concept of agency in urban development projects Arnstein's ladder of participation is used. Then multiple examples of literature are brought forward to stress the importance of agency in interventions for an inclusive energy transition.

Sherry Arnstein is one of the most cited scientific authors on the subject of public participation. Her definition on citizen participation is the following: *"citizenship participation is a categorical term for citizen power. It is the redistribution of power that enables the have-not citizens, presently excluded from the political and economic processes, to be deliberately included in the future. It is the strategy by which the have-nots join in determining how information is shared, goals and policies are set, tax resources are allocated, programs are operated, and benefits like contracts and patronage are parceled out. In short, it is the means by which they can induce significant social reform which enables them to share in the benefits of the affluent society"* (Arnstein, 1969, p. 222).

In her work she has developed a ladder, see figure 4, that shows different levels of participation in which power is distributed. She identifies eight degrees of participation, divided into three subsections. Ascending the ladder through each eight rungs of participation the associated 'participation type' offers the citizen greater amounts of input and ownership over the development process. Ranging from the citizen having no power and no say (being a passive actor, an observer, within the process) to having almost complete ownership over all aspects of the project, implementation and ongoing maintenance of the end result (Arnstein, 1969).

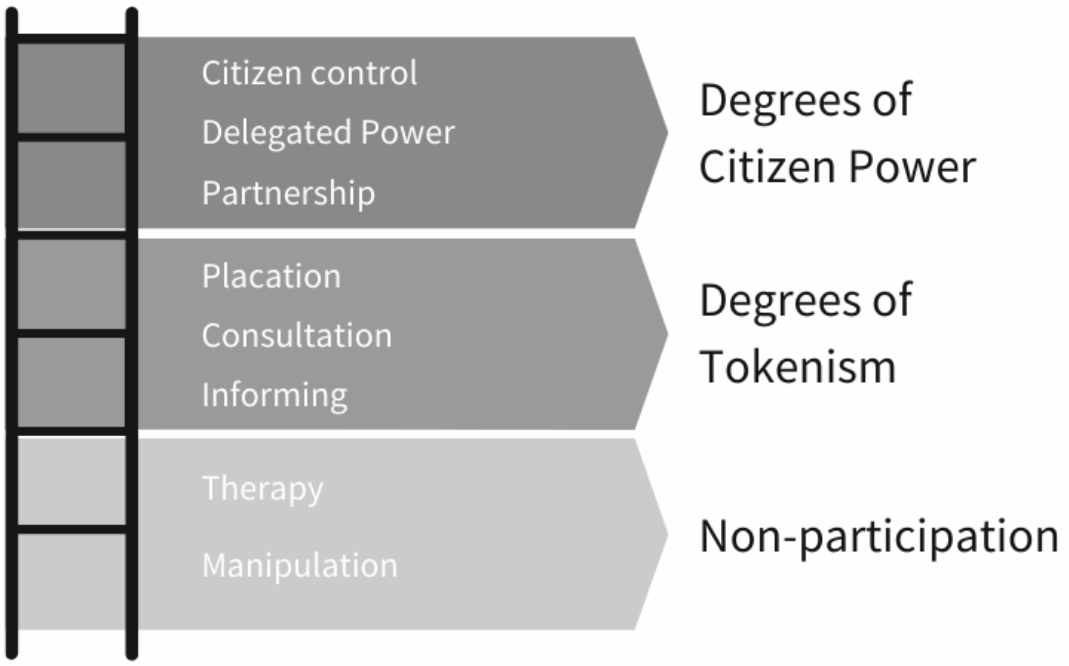

Figure 4: Arnstein's Ladder of Citizen Participation (Adapted from Arnstein, 1969)

That agency is important in the energy transition is mentioned by several scholars (Heffron, 2021; Lennon et al, 2019; Uyterlinde et al., 2022). Agency of citizens in urban development projects on renewable energy sources increases the moment citizens have more power in the decision making and there is an equitable potential for local ownership. Local ownership and thus agency can positively influence the involvement of citizens in projects. Research showed that people like to see a meaningful change towards renewable energy sources where they have real agency (Lennon et al, 2019). This research wanted to understand how local communities can become empowered to make a meaningful contribution to the energy transition. Agency was identified as one of the assessment criteria for the participatory models by researchers and participants of energy communities. On top of that, by means of agency the direct levels of energy access and reliability can be increased (Heffron, 2021). Community owned renewable energy projects on the local level can play a fundamental role in achieving an energy transition that is inclusive. These projects immediately influence levels of energy access and reliability for inhabitants that take part in the projects (Heffron, 2021). Lastly, projects in which inhabitants are intensively involved and have ownership are more likely to have long term positive benefits for the neighbourhood and can positively affect social structures in the neighbourhood (Breukers et al, 2021; Huygen & Fortuin, 2021; Uyterlinde et al, 2021; Van der Lans, 2014).

A method which can be associated with citizen power, the higher level of Arnstein's ladder, is co-creation (Itten et al., 2020). At this level citizens have more control and access to information than in lower levels. In co-creations sessions the participating actors together give shape to the innovation process. Only when users participate in the development of an innovation can one speak of co-creation (Steen & Van Bueren, 2017). The deeper dimension to citizen participation is to collect the demand among inhabitants (Sena & Meesterberends, 2018). In the co-creation session it is of high importance to have low threshold gatherings

and to make use of appropriate language, also a mindset based on trust will contribute positively to the process (Steen & Van Bueren, 2017).

Several recommendations have been made in literature when it comes to stimulating agency and co-creation. In this paragraph five recommendations are listed for the development of agency and co-creation with inhabitants. First, prioritise participation, this means visibility of the project team in the neighbourhood (McKnight & Kretzmann, 1993) and an open attitude (Uyterlinde et al., 2022; Van Hal & Götz, 2022). The presence of approachable people in a neighbourhood has the potential to contribute to trust building between the project team and the neighbourhoods' inhabitants. An example of this is to create a physical space for citizens to meet the project team (Kesteren, 2021). Hereby, the dialogue between residents and the team can be facilitated and might lead to mutual understanding according to van Kesteren (2021). Secondly, start the conversation early about all kinds of topics in the neighbourhood. It takes time to set up and execute a project, especially when trust has to be developed (Toronto and Region Conservation Authority, 2020; Uyterlinde et al., 2021). Also by introducing the project early on to inhabitants there is still time to collect desires and wishes of inhabitants and actually build them into the project. Third, be transparent and open also about insecurities of the project and difficulties (Uyterlinde et al., 2022; Van Hal & Götz, 2022). Transparency contributes to the acceptance of public participation (Rowe & Frewer, 200). Fourthly, to keep attracting new inhabitants to the process there should be innovation and evaluation of the participation process (Uyterlinde et al., 2022; Van Hal & Götz, 2022). These are some of the reasons it is important to have a flexible engagement strategy (Chilvers & Kearnes, 2016; Heffron, 2021; Uyterlinde et al., 2021). When new innovations or information about the neighbourhood come up, the project should be able to adapt to the new findings. Lastly, involved professionals can make the difference to make the project successful (Toronto and Region Conservation Authority, 2020; Uyterlinde et al., 2021) This means that the way that the project team is engaged with the project and the inhabitants can make the difference in the creation of agency and co-creation with inhabitants.

This section stresses the importance of agency and local ownership in renewable energy projects with inhabitants. Agency has everything to do with citizen power, according to Arnstein (1969), citizen power can be reached by giving inhabitants a real say in urban development projects. Local ownership can contribute to the inclusiveness of projects because it can increase local energy accessibility and availability. In the last paragraph of this section, several recommendations are made on how agency can be stimulated in urban development projects.

4.2 Identification of the community: neighbourhoods' capacities

This condition is closely linked to the former point of agency. To develop a certain level of agency for inhabitants it is important to research the capacities in a neighbourhood. This idea, amongst others, is based on the ABCD method of McKnight & Kretzmann. The ABCD approach stands for Asset Based Community Development. Their work pleads for neighbourhood development and innovation from within the neighbourhood. Kretzmann & McKnight (1996) distinguish two ways of looking at a neighbourhood. The traditional path, that is deficiency driven and death ended and the alternative pathway that focuses on capacity development. In this second approach emphasis lies on the qualities and capacities in the neighbourhood

In the first named pathway the community is defined by her problems, needs and deficiencies. Images of crime and violence only reveal parts of the actual conditions in the neighbourhood. By framing a community as needy, public, private and non-profit organisations come into the neighbourhood, with the best intentions, to teach the nature and extent of their problems, and the value of services as the answer to their problems (Kretzmann & McKnight, 1996). As a result of this many lower income neighbourhoods inhabitants have now come to believe that their well-being depends on being a client. Even more tragic is that, as a result of the earlier described deficiency orientation, inhabitants start to see *"themselves and their neighbours as fundamentally deficient, victims that are incapable of taking charge of their lives and of their community's future"* (Kretzmann & McKnight, 1996, p. 24).

The second pathway described by Kretzmann & McKnight (1996) leads to activities and policies based on the capacities, skills and assets of lower income people and their neighbourhoods. Apart from the problems with the deficiency pathway there are two additional reasons for this approach. First, historic evidence indicates that significant community development is never built from top down, or from outside in (Kretzmann & McKnight, 1996). It only takes place when local communities are committed to investing themselves and their resources in the effort. Despite this, it doesn't mean that valuable outside assistance can be provided to the communities. The second reason for capacity focus development is that there is often no point in waiting for outside help. *"The hard truth is that development must start from within the community and, in most of our urban neighbourhoods, there is no other choice"* (Kretzmann & McKnight, 1996, p 25.). By perceiving individuals and organisations in poor neighbourhoods as the representation of resources upon which to rebuild, community leaders are able to effectively develop communities. The efforts to effectively develop communities are based upon the understanding and connecting of community assets, capacities and abilities (Kretzmann & McKnight, 1996).

While the work of McKnight & Kretzmann wasn't developed on the topic of the energy transition, valuable lessons can be drawn from it. It is important to identify the ins and outs in a neighbourhood, the needs and desires from inhabitants and their values for interventions that contribute to an inclusive energy transition (Baart, 2019; Klösters et al., 2020; van Hal, 2022).

4.3 Skill development: building capacity & knowledge

Building on the work of Kretzmann & McKnight (1996), capacity building is an important asset of community development projects. Where some scholars argue the importance of knowledge and capacity building on the topic of the inclusivity of the energy transition, others argue the importance of knowledge and capacity building in general.

For the energy transition to be inclusive it is essential that a variety of stakeholders understands and engages with the importance of an inclusive energy transition (Heffron, 2021). Knowledge plays an important role in potential choices of individuals and groups related to the energy system (Mengolini & Masera, 2021). A lack of knowledge on energy poverty and on how to reach out to the vulnerable and underrepresented groups, are seen as limitations for engagement (Hanke et al., 2021). In order to overcome this barrier,

capacity building of public servants and the private sector on an inclusive energy transition can lead to better decision making from their side (Heffron, 2021).
Also from a citizen perspective, knowledge building can increase the inclusivity of projects. A lack of accessible and available information about renewable energy projects is one of the barriers for vulnerable households to participate in them, according to Hanke et al. (2021). Next to that, knowledge development on an inclusive energy transition of the public will contribute to a higher public acceptance of the energy transition and acknowledgement of the role of the public in the transition (Heffron, 2021). So, this information argues that the sharing of knowledge can work both ways. Spreading the right information can lower barriers for vulnerable households to join projects and it can increase the public acceptance of the role of the public in the energy transition.
In conclusion it can be stated that the importance of knowledge and capacity building with citizens, public and private parties on the energy transition and its inclusivity is supported by literature (Hanke et al., 2021; Heffron, 2021; Mandarano, 2015; Mengolini & Masera, 2021).

Skill development projects beyond the topic inclusion in the energy transition can increase engagement in urban development projects. As the assessment of Mandarona (2015) showed that training for citizens on how to engage in urban planning issues resulted in a higher level of trust in the institutional process and increased the capacity to engage in civic developments. Lasting projects that consist of capacity and knowledge building for inhabitants can lead to long engagement in urban development projects (Toronto and Region Conservation Authority, 2020). The topic of these trainings can, and sometimes maybe must, reach beyond the topics of energy and inclusion. Chapter 6 & 7 will further elaborate on this.

This section shows the importance of skill development for an inclusive energy transition. The first paragraphs argue the importance of knowledge building with citizens, public and private parties on the energy transition and its inclusivity. While the former paragraph adds the importance of knowledge and capacity building that reaches beyond the topic of energy transition and inclusivity for active involvement of citizens in urban development projects.

4.4 Multi-objectivity: seeking co-benefits

The point of addressing a multitude of issues by one intervention in relation to an inclusive energy transition is mentioned by several scholars (Baart 2019; Lennon et al. 2019; Uyterlinde et al., 2019; Uyterlinde et al., 2021; Van Hal, 2021) and will be discussed in this section.

The potential for the community to benefit from energy projects is seen as an indicator for the citizen participation potential (Lennon et al., 2019). This means that if the energy project contributes positively to the neighbourhood, beyond the direct outcomes of the energy project itself, the project has a higher potential for citizens to participate. To improve community's conditions at the local level by means of energy projects, it is important to co-develop with inhabitants to become more involved in energy projects (Mandero, 2015). This will contribute to building up social capital, empower participants and improve community conditions at the local level (Mandero, 2015).

An example of increasing citizen participation potential is wealth generation at the local level (Lennon et al., 2019). Vulnerable groups can have financial reasons not to join renewable

energy projects (Hanke et al., 2019), therefore the potential of generating wealth from the project could benefit the engagement of vulnerable groups. In relation to this, it is important to have short term tangible results, in order to keep inhabitants involved for long term projects (McKnight & Kretzzman, 1996).

In order to make the energy transition successful in all Dutch neighbourhoods, a body of literature advocates for an integral neighbourhood approach improving multiple challenges of a neighbourhood, more than just the energy transition. The term that is often used is ‘koppelkansen’, which means that by addressing the energy transition in neighbourhoods also other aspects of liveability can be improved by the combining of measures (Baart, 2019; Van Hal, 2022; Uyterlinde et al, 2019; Uyterlinde et al, 2021; Uyterlinde et al, 2022). Uyterlinde et al. (2021) mention five reasons for this; primarily it leads to a bigger support base for the energy transition. Probably, it can take away the image that inhabitants carry the burdens of the energy transition. Secondly, combining the tackling of several challenges can contribute to creating a coherent story of the developments in a neighbourhood. On the contrary, a neighbourhood in which several individual projects take place at the same time can cause confusion for inhabitants. This is something to be cautious of when working multi-objectively. Thirdly, by tackling issues that were raised by inhabitants, and thus early involvement of residents in the neighbourhood development will contribute to a feeling of agency of inhabitants. Fourthly, tackling multiple issues identified by inhabitants leads to effective policy. Professionals and policy makers can miss issues faced by inhabitants, this might lead to ineffective policy making. Fifth, and lastly, effective use of public resources. By combining activities manpower can be used more efficiently. Also when a relationship with trust is built with inhabitants the project can be more effective (Uyterlinde et al., 2021).

Combining measures in a vulnerable neighbourhood with regards to the energy transition can be done in two ways (Baart, 2019; Uyterlinde et al., 2022), in the first approach co-benefits are linked from energy transition measures. In the other way an integral neighbourhood approach is being used and energy transition is part of the scope. For both approaches the neighbourhood inhabitants’ wishes, ideas, values and beliefs are being put in the centre. The role of inhabitants differ in the two approaches. In the first approach inhabitants are being informed, consulted and asked to co-decided. These ways of participation are the lower levels on Arnstein’s participation ladder, see figure 4. In the second approach inhabitants can have the same role but also can have more responsibility, meaning ownership, over the project and thus create the possibility to develop capacities (Baart, 2019).

Uyterlinde et al., (2021) identified five frequently named opportunities for the combining measures in the energy transition in vulnerable neighbourhoods. In the five opportunities the topic of energy is combined with the following themes: health, poverty and debts, participation, physical neighbourhood improvements and the public space. While in theory these opportunities are identified, in practice they are hard to realise (Uyterlinde et al., 2019; Uyterlinde et al., 2021). A lack of time and man-power, administrative pressure and juridical, financial and technical insecurities were reasons for the lack of an integral approach in the neighbourhoods taking part in the renewable energy projects (Uyterlinde et al., 2021). While literature is clear on the benefits of multi-objectivity, in practice the co-benefits are seen as extras not as necessary (Uyterlinde et al., 2019).

This section argues the importance of seeking for co-benefits for the inclusivity of energy transition projects. The additional objective of saving money gave forward especially as a potential co-benefit. It was mentioned that these benefits have to be short term and/or tangible. Apart from a financial objective also objectives related to health, participation, public space and physical neighbourhood improvements were named. To relate back to section 4.1 & 4.2 it will increase the quality of the project if the co-benefits are looked for and found together with inhabitants of the neighbourhood. In practice multi-objectivity is currently still seen as extra instead of necessary (Uyterlinde et al., 2019).

4.5 Conclusions

In conclusion, this chapter presents four conditions for interventions for an inclusive energy transition. The following conditions were found in an exploration of the literature; agency, identification of the community, skill development and multi-objectivity. With the first being agency, if inhabitants can feel ownership to an urban development project on renewable energy in their neighbourhood this increases involvement and support of the community. Also projects in which the neighbourhood is involved have a higher potential to increase social structures and have long term benefits for the neighbourhood. Secondly, the condition of a positive identification of the community was found. An approach to the neighbourhood that is based on equality and humbleness instead of superiority is needed in order to be inclusive. Thirdly, the condition of capacity and knowledge building was found as a condition for interventions that contribute to an inclusive energy transition. Knowledge and capacity building has the potential to engage and inform inhabitants, private and public sector on the energy transition. Sharing knowledge on the energy transition and its inclusivity amongst a multitude of stakeholders can lead to better decision makers of these stakeholders with regards to inclusivity. Sharing knowledge with citizens can lower the barrier for vulnerable citizens to join energy projects but also it can contribute to a higher acceptance of the role of citizens in the energy transition. Lastly, multi-objectivity was found as a condition for interventions that contribute to a more inclusive energy transition. Multi-objectivity has the potential to make the energy transition more inclusive because by involving co-benefits in the transition more people can be engaged. Financial co-benefits came forward but also themes as health, participation, public space and physical improvements of the neighbourhood. Despite the substantial body of literature that was found on the advantages of multi-objectivity, in practice it is still seen more as an extra than as essential. To conclude this chapter, an exploration of the literature resulted in the following 4 conditions for interventions: agency, identification of the community, skill development and multi-objectivity.

Chapter 5: Introduction of the studied cases

In this chapter the different case studies are described. The case studies are initiatives that have been visited during the fieldwork. For this research several initiatives have been studied in order to get a better understanding for the neighbourhood and the community's needs, interests and priorities. The initiatives that were studied are Bloei & Groei, community centres; Multibron & Spinnewiel, de Groene Hub and Stichting SES. See figure 5 for the locations of the visited initiatives. In the next sections the initiatives are described in more detail.

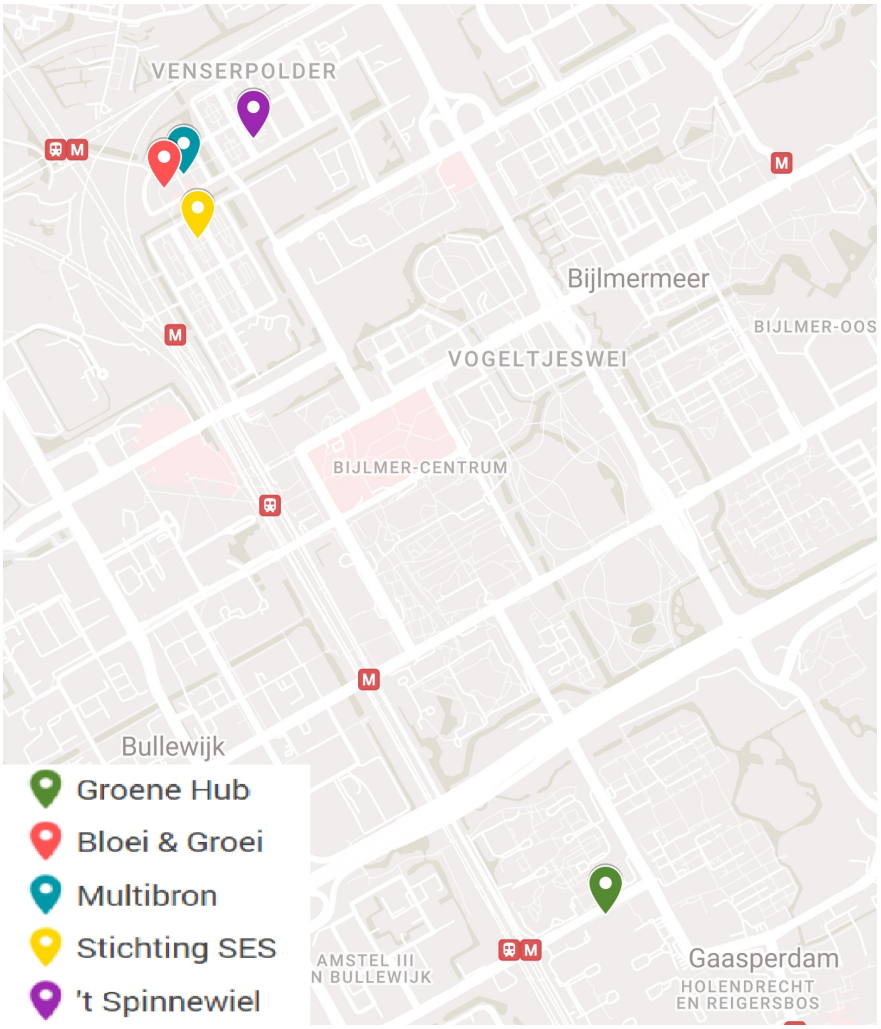

Figure 5: Locations of visited initiatives

5.1 Bloei & Groei

Bloei & Groei is a women-led urban community gardening project for women living in the city districts South-East or New-West of Amsterdam (Bloei & Groei, 2022). Bloei & Groei has several, so-called, 'healing-gardens' around the city only for women, one in Gaasperdam, one in New-West and one in Venserpolder (Bloei & Groei, 2022). In figure 6 the healing community garden in Vensperpolder is depicted. In the Venserpolder garden, women that take part in the project, own a plot and share a community garden which they work on together (De Breed, 2019). To take part in the project the women join for a growing season which starts in March and ends in November (Bloei & Groei, 2022). The project consists of

both coaching on ‘bloei’ (‘flowering’) and ‘groei’ (‘growing’) takes place. The so-called ‘flowering’ part of the project emphasises the planting, growing and harvesting of vegetables, herbs and fruits. The ‘growing’ part of the project puts its emphasis on personal development of the participants. One day a week a ‘groeicoach’ (‘growing coach’) is present in the garden helping to prepare, maintain and harvest the gardens. Another day of the week is reserved for the more social part of the project. This means that there is space to discuss personal life experiences and challenges also coaching takes place. Bloei & Groei hosts several workshops on wild picking (wildplukken), herbal art, do it yourself (DIY), culinary and writing. The Venserpolder garden location is also used as a place to host workshops on well-being. For all events the importance of the creation of a safe-space is being stressed. This means that everybody feels safe and space to share experiences at a space (employee Bloei & Groei, personal communication, 28-02-2022; Bloei & Groei, 2022).

Figure 6: The private gardens of Bloei & Groei at Venserpolder (own picture)

5.2 Community centres: Multibron & ‘t Spinnewiel

Venserpolder is a very active neighbourhood with the presence of several community centres in the neighbourhood (Metabolic, 2020). As shown on figure 5, there are two community centres located in the Venserpolder, both are owned by housing corporations. Community centre Multibron is located just across the street from the Bloei & Groei community garden location in Venserpolder. Multibron is an initiative of the housing corporation *‘Eigen Haard’*(Gemeente Amsterdam, 2020). Figure 7 shows the street window of Multibron and by the amount of flyers the multitude of their initiatives in the Venserpolder. Multibron offers language courses, walking tours, help to fix your computer and much more. Weekly dinners, for all inhabitants in the neighbourhood, are cooked by volunteers to fight loneliness (employee Multibron, personal communication, 28-02-2022). A little east of Multibron, Buurtsalon ‘t Spinnewiel is located. ‘T Spinnewiel is owned by housing corporation *‘de Alliantie’* (Gemeente Amsterdam, 2020). Also at Buurtsalon ‘t Spinnewiel many activities are organised. At their website a weekly program is offered for elderly and kids, activities around creativity, sports and gardening are organised (Buurtsalon Zuidoost, 2022). Like Multibron, one of the goals of ‘t Spinnewiel is to fight loneliness in the neighbourhood (employee ‘t Spinnenwiel, personal communication, 17-03-2022).

Figure 7: Street window of Multibron (Own picture)

5.3 Groene Hub

De Groene Hub is located in an old school building in Holendrecht. It is a community for learning and doing social and sustainable initiatives. It is under the safe care of the COCRATOS foundation. This foundation is an international institute for inclusive science. The foundation aims to endogenously build a society that is co-creative, just, diverse and sustainable (Cocratos, 2022). In the practices at the Groene Hub, the belief is shared to empower the community from within (employee Groene Hub, personal communication, 15-3-2022). In the Groene Hub, Kate's Raworth's donut economy (2017) is put into practice there by several donut-deals. The donut economy is based on a circle, see figure 8. The outside of this circle visualises the environmental ceiling and the inside depicts the social foundations. The environmental ceiling is transcended when economic development leads to environmental issues like climate change, chemical pollution, biodiversity loss and so on. The social foundation is based on essentials for a qualitative human life like food, health, water, gender equality and education. According to Raworth's model, there is a safe and just space for humanity between the environmental ceiling and the social foundation, where there is space for inclusive and sustainable development.

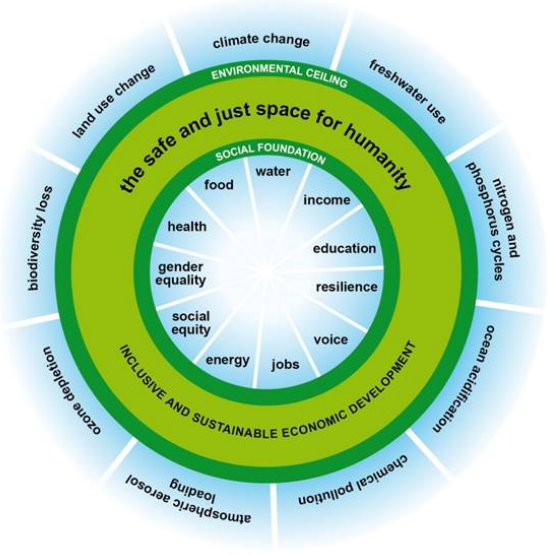

Figure 8: Donut model of Kate Raworth (Raworth, 2017)

Groene Hub's donut deals aim to build on three aspects of the social foundation while decreasing humanities environmental impact (Stijkel, 2022). An example of one of these donut deals is the quick-fix-brigade. This is a program that trains inhabitants to execute small tasks on how to save energy in houses and bring down the energy bill. By means of education and job creation this donut deal builds on the social foundation. By reducing the neighbourhood's energy use it aims to reduce our environmental impact and move beneath the environmental ceiling (employee Groene Hub, personal communication, 26-4-2022). This is just one of the donut deals that have been created. Another donut deal was about sewing curtains. Local women increased their textile processing skills and window insulation for the neighbourhood was created to save energy. Next to both deals, the Groene Hub offers various workshops and courses, one of them started in 2019. This training aimed to make people that weren't able to participate in society, aware of their qualities and their ability to learn and do new things. The certificate helped to build participants' resumes which led to paid work for some of them. Due to corona this training was cancelled, but now there is the ambition to re-start the training program (employee Groene Hub, personal communication, 26-4-2022).

By the time our ethnographic team joined activities at Groene Hub a new campaign was launched around infrared panels. The campaign on infrared panels was later also presented as a donut deal. Infrared panels are panels that heat up material by means of infrared radiation. Infrared panels work on electricity, and were for that reason suggested as an alternative to gas. Instead of warming the house with the central heating system that is based on gas, infrared panels were offered as an alternative. Both the high gas price and solidarity with Ukraine, because of the war they are currently in with Russia, were reasons to initiate this campaign (employee Groene Hub,15-3-2022, personal communication).

5.4 Stichting SES

Stichting SES is located in Boeninhuis in Venserpolder West, a meeting space from the housing cooperative 'De Key' (Gemeente Amsterdam, 2020). Stichting SES is a women led-initiative organising after school activities for youth since 2011. These activities include homework supervision, yoga and creative activities (employee Stichting SES, personal communication, 2-3-2022). Also dinner is being served from time to time but this doesn't come without a cost. In an interview with an Amsterdam based community platform an employee of Stichting SES mentioned that the youth has to understand that not everything is free (Venzo, 2016). For that reason the youngsters clean up the neighbourhood one day a week (Venzo, 2016). Next to that, education is being offered about healthy eating and a school garden is owned next to the building, see figure 9. The foundation aims not only to reach children but everyone in the neighbourhood, this is done by also organising activities for parents and reaching out to people who need help. Stichting SES is to work and learn, an example of this is that community service can be done there (Stichting SES, 2022). What is most important at SES, is that it doesn't matter which colour you are, everyone treats each other with respect and can be themselves (employee Stichting SES, personal communication, 2-3-2022).

Figure 9:The school garden of Stichting SES (own picture)

5.5 Conclusions

This chapter describes the different case studies that have been visited during the ethnographic fieldwork. The Bloei & Groei healing garden in Venserpolder was visited by the researchers as volunteers. This garden is made especially for women, to grow fruits, vegetables and herbs, but also to grow mentally. By creating a safe-space in which women can share this is being aimed for. Next to that several community centres were being visited during the research. Both community centres, named Multibron and ‘t Spinnenwiel are located in Venserpolder. Outside of Venserpolder, in Holendrecht, but in Amsterdam Zuidoost, Groene Hub is located. This is a centre on inclusivity with a focus on sustainability. Initiatives there are called ‘donut deals’ and try to reach several objectives on both environmental and social sustainability. Lastly, stichting SES was visited by the researchers. Stichting SES is located in Boeninhuis, in Venserpolder. This is a women-led initiative that offers after school support for youngsters. Next to tutoring also dinners are being served and workshops are offered at stichting SES. This chapter describes the four different case studies that were visited during the fieldwork.

Chapter 6: Conditions of interventions for an inclusive energy transition in Amsterdam Zuidoost

This chapter presents the different conditions of interventions for an inclusive energy transition in Amsterdam Zuidoost. The conditions of interventions for an inclusive energy transition that were found in theory (chapter 4); agency, identification of the community, skill development and multi-objectivity were also identified, to different extent, in the case studies. Next to the conditions that were found in theory also additional conditions were found during the fieldwork in Amsterdam Zuidoost. By means of ethnographic research and interviews the following, additional, conditions have been identified: the need to feel safe, personal connections, lightheartedness, practical examples and youth. In total nine conditions were identified and are described in this chapter. As mentioned already in chapter 4, the different conditions are heavily interlinked and intertwined. A condition can have the ability to strengthen another condition, more will be explained in the following sections.

6.1 Agency: local ownership

As found in literature a sense of agency with regards to the energy transition contributes positively to the inclusivity of the energy transition. Also in Venserpolder and other neighbourhoods in Amsterdam Zuidoost, agency was identified as a condition of interventions for inclusivity. People have a say in the developments in their neighbourhood and there is ownership by inhabitants in local initiatives. The condition for agency for inclusive interventions is also confirmed in an interview with a key informant in Zuidoost.

To start with, what was noticed in both the Bloei & Groei initiative and Groene Hub campaign was the potential of local ownership for inhabitants. In the Bloei & Groei community garden women could own their own plot to grow their fruit, vegetable and herbs. Once the garden is theirs, the women are responsible for the watering, weeding and harvesting of the garden. Next to physical ownership, also immaterial ways of agency are aimed to be established. Workshops were offered on how to set up your own gardening business. By means of this approach women feel empowered because they develop their own project.

With regards to the campaign on infrared panels at Groene Hub also the condition for agency was identified. People could buy a panel for themselves with a discount and were able to donate one infrared panel to someone in the neighbourhood who couldn’t afford this. This campaign really focused on the agency of households owning a panel and reducing their gas bill. There was local ownership with regards to the panels in this campaign for the households that joined.

Also by means of an open co-creation session on the set-up of the campaign, inhabitants were invited to create ownership over the campaign itself. Referring back to figure 4 of Arnstein's Ladder of citizen participation, in section 4.1, inhabitants were given a high place on the ladder during the co-creation of the campaign. There was a degree of citizen power.

It is important for households to feel ownership in their house. The fieldwork experience in box 2 shows that people are less likely to invest in their homes when this is a rental home. In

that case inhabitants see the housing corporation as responsible for the energy saving actions. Also it can be forbidden to make energy saving adjustments when renting a house instead of owning one.

Box 2: Agency: flyering for Groene Hubs campaign

> *The first man we spoke to was dressed in comfortable clothes with some holes and stains in them. We had a friendly conversation about energy and energy savings. He was supporting the idea, but living in a rental house and he wanted to move. For that reason he was not interested in doing adjustments in his house at the moment. He mentioned it would be a good idea for us to go to VVE's (association of owners) to discuss the infrared panels with them, because it is something that they are also responsible for.*

Agency can contribute to the growth of an initiative as came forward in the interview with the active citizen. According to her, positive experiences with energy saving appliances which somebody owns in their house are likely to be shared with others. This can then cause some sort of snowballing effect which means that more and more people hear about the initiative and would like to join. But first the agency needs to be established by at least one of the inhabitants to recommend the good experiences to others (Interview 3).

This section shows the importance of agency: local ownership in Amsterdam Zuidoost for interventions. Local ownership can increase the involvement of inhabitants in certain projects. On top of that, local ownership was identified as necessary to make it interesting for people to make investments for saving energy or switching to renewable energy sources. Also, agency can cause a snowballing effect if experiences with appliances or services are shared with others.

6.2 Identification of the community: neighbourhoods' capacities

The way that the neighbourhood is identified is crucial before even a sense of agency can be developed. This came forward in multiple interviews with key informants and this is also what the fieldwork showed.

Several interviewees brought forward that the approach to a neighbourhood is essential in any kind of developing project. An approach where the party is feeling superior over the community carries risks. When the other party is only there to 'fix problems' and educate, the community's capacities can go to waste. This means that his other party is not aware of the fact that this party can also learn and grow from the encounter. In other words you could say that this party is lacking a sense of reflexiveness or humbleness. On the contrary, in an equal setting, in which both parties are aware of their learning opportunities from each other, the community can flourish (Interview 1, 3). The feeling of inequality is also identified as an obstacle for an inclusive energy transition. Inhabitants can feel overwhelmed or dominated with knowledge or terminology, which can make them feel inferior (Interview 4 & 5). This can result in someone disinterested or dropping out. An equal partnership needs to be developed between inhabitants and other important stakeholders in order for the neighbourhood to improve (Interview 2).

The Groene Hub aimed to make use of the community's capacity by the first open brainstorm of their campaign. The goal of the brainstorm was to co-create the campaign with inhabitants. By means of a turn taking system, all different views were heard during the brainstorm. This co-creative atmosphere prevented some people dominating the conversation.

Also for the community garden at Bloei & Groei, the participating women decide what is being grown and how much. For example, because of the women's preferences typical suriname's plants were grown so they could be processed in their dishes. This example shows that the community's ideas are not only listened to but also executed.

An attempt to work with the neighbourhood capacities was shown by the Groene Hub during the fieldwork. During the infrared panel campaign, it was also possible to donate an infrared panel to a household. The households that received a panel by means of donation, were asked to contribute to the community by volunteering for the Groene Hub. The volunteering work would be specified to the skills and capacities of the volunteer combined with the needs and possibilities at Groene Hub. In that way the neighbourhood's capacity was used for improvements of the community, while in the same way aiming for energy savings. An example of this is described in box 3. As briefly touched upon in this paragraph, the next section dives deeper in the topic of skill development.

Box 3: The community's capacity: co-creation in campaign preparation

A woman on a scoot mobile drove by at Groene Hub, she was rheumatic. Her neighbour told her that she could receive an infrared panel if her neighbour bought one. Because of her physical condition she didn't think she was able to do the volunteering work that was requested to receive an infrared panel. During a talk with an employee of Groene Hub it came forward that she used to be a seamstress ('naaister'). Since Groene Hub also organises sewing activities, this was seen as a very valuable experience which she could pass on to others at Groene Hub.

This section shows the importance of approach to a neighbourhood. Instead of the assumption that the neighbourhood is identified by defencecies, the approach should be humble and focusing on the capacities that the community carries. This approach will create the biggest potential for the neighbourhood to flourish. This can be interpreted in general context but also specifically for the energy transition in Amsterdam Zuidoost. Certain terminology can be overwhelming and therefore exclude people. Therefore it is important to create an equal partnership with the community by speaking the same language. Establishing agency with inhabitants over the energy transition can help to develop an equal relationship. The following sections will dive into how this relationship can be stimulated.

6.3 Skill development: building capacity & knowledge

The theoretical finding that skill development is needed for inclusive interventions was also found in practice in Amsterdam Zuidoost. In all cases that were studied during the fieldwork skill development projects were found. Also key informants mention the importance of capacity and knowledge building.

Bloei & Groei offers several training programs for women. Firstly, by joining the Bloei & Groei program participants get to know coaches that are there to guide them in gardening as well as their personal processes. A special training program is offered to women that would like to become a garden coach themselves. Apart from coaching on gardening and the personal level, also other workshops are hosted that are open for women that are not involved in the Bloei & Groei garden. These workshops differ from creative activities to cooking in which women are able to relax, learn a new skill and can escape from hectic daily life. In this way Bloei & Groei offers all kinds of capacity and knowledge building training to women in Amsterdam Zuidoost.

The community centres in Venserpolder work on capacity and knowledge building for residents of Venserpolder. This is done by means of the earlier mentioned, see section 5.2, language courses and creativity and sports workshops.

Groene Hub offers a multitude of workshops and courses for residents of Amsterdam Zuidoost. A long term training that is being offered, focuses on empowerment. The training helps to find your passion and be actively engaged in society. This makes it easier to find a job later. Some other projects also built on the skill and knowledge development with regards to the energy transition, like the quick fix brigade, which is explained in box 4.

Box 4: Skill development: donut deals at Groene Hub

The quick fix brigade was explained by Employee of Groene Hub. This deal is about insulating homes and other relatively easy and quick tools to save energy (and money). The social side of this deal is that locals are being trained on how to do the work. This deal is executed together with the Regenboog groep and the municipality. The first 15 houses are now being done to showcase as an example for the rest of the neighbourhood. The next would be to ask for an assignment by social rent for money. Because this would benefit three parties; the renters of the homes are more sustainable, the housing corporations don't have to do it themselves and the Quickfixbrigade would make money.

As mentioned earlier Stichting SES focuses on offering a safe space for kids, this comes with homework support but also sport activities and a school garden. By the diversity of offered activities children are able to develop multiple skills at stichting SES, from vegetable and fruit harvesting to yoga or cleaning the neighbourhood. There are numerous coaches at Boeninhuis that facilitate these activities.

Before the energy transition can be realised in Amsterdam Zuidoost, first the social transition needs to happen (Interview 2). This means that attention needs to go out to the social conditions of the neighbourhood. Thus, to start with it is important to get to know each other and build on personal competences. Once this is reached, it is time for the demographic transition, this entails to let other stakeholders help to develop the conditions in the neighbourhood. After that it is time for the energy transition (Interview 2). Following this logic, capacity and skill building is the first step to an inclusive energy transition in Amsterdam Zuidoost. Educating inhabitants means to enable them to build their own neighbourhoods (Interview 1).

Information and becoming aware about energy saving materials and actions is an important aspect for an inclusive energy transition (Interview 3 & 4). As was mentioned already in

section 6.2, terminology can form a barrier for inclusion. The words 'energy transition' can exclude people from joining a conversation. There is a need for explanation or simplification of this terminology (Interview 3). A lack of knowledge is often identified as a reason for energy consuming behaviour (Interview 1 & 2). This behaviour can result in mould for example by not properly drying the bathroom after use or a high energy bill because the radiator wasn't turned off during a holiday (Interview 1). Information nights have been organised to discuss those topics (Interview 1).

A lack of knowledge on for example institutional processes can make inhabitants feel powerless. These residents can act more depending on other parties because they feel like they don't have the knowledge to properly respond, or they tend to adapt to what is being said (Interview 4). While a native dutch speaker knows his right and is therefore more responsive. For that reason it is important to also develop skills beyond the topic of energy.

During the ethnographic fieldwork the importance of skill development was found in Amsterdam Zuidoost and confirmed by the interviewees. Many different knowledge and capacity building programs take place in Venserpolder, with regards to many topics from sports to creativity. According to one interviewee, transition on a social level has to take place before the energy transition can take place. This means that capacity building is essential as a start for the development of personal competences. Next to this, also capacity and knowledge building is needed on the topic of the energy transition. Information on how energy can be saved needs to be shared and terminology has to be made more accessible for inhabitants. Giving attention to skill development, capacity and knowledge building, has the potential to include more people into the energy transition.

6.4 Multi-objectivity: seeking co-benefits

The condition of multi-objectivity in intervention was found in fieldwork at the Bloei & Groei initiative and with Groene Hub. In the interviews often money was mentioned as a potential co-benefit of the energy transition.

For participants of Bloei & Groei it is clear that there are multiple benefits of joining the program. Firstly, it can be relaxing to be outside in nature and work in the garden. Also, women enjoy the presence of each other and meeting new people. Then, there is the advantage of harvesting your own fruit, vegetables and herbs and not having to pay for them in the supermarket. Also by the manner of gardening the soil quality and biodiversity in the inner garden increases, compared to the circumstances before. On top of that participants have the ability to learn about gardening and themselves, the neighbourhood can become theirs more than before.

While the multi-objectivity of Bloei & Groei is more implicit, at Groene Hub there is a clear pathway on how their initiatives, the so-called 'donut deals', work on multi-objectivity. With each donut deal it is aimed to work on at least one environmental goal and three social goals. Social goals can have to do with income, education, gender equality or social equity (see figure 8). By combining the social and environmental challenges it is aimed to work on an inclusive and sustainable economic development.

In the interviews it became clear that money can be a very motivating co-benefit for inhabitants to engage with the energy transition. The energy transition is for some inhabitants of Amsterdam Zuidoost, something that is far away, as box 5 also suggests. Inhabitants worry about what they are going to eat that day (Interview 1 & 2). The energy bill can be a challenge for households in Amsterdam Zuidoost. Especially, high investment costs that have to be paid up front can scare inhabitants living in poverty (Interview 3 & 5). It is important for inhabitants to see that money is being saved by energy preserving interventions (Interview 3 & 4). For example, it helps to air out the house to warm it up after, since the cold air warms up more easily than moist air that has been in the house for a long time (Interview 1). If these behavioural changes are reflected in the energy bill people are more likely to keep up certain with certain practices.

Box 5: Multi-objectivity: First reactions to the campaign

A man opened the door and said to us, after a small introduction: "'Whatever… (ik geloof het allemaal wel) now I am going to sit in the sun and enjoy my warmth."

Multi-objectivity was found, more implicit in the case of Bloei & Groei and more explicit in the case of Groene Hub. Some other conditions like skill development were found as additional objectives in the cases. Another important objective that came forward in ethnography and the interviews was the importance of money saving. Saving money in the short term could be a very important reason for households to do certain energy saving measures. By means of multi-objectivity, interventions for the energy transition have the potential that more inhabitants will engage with them and therefore can be more inclusive.

6.5 The need to feel safe: safe spaces

During the ethnographic research it became clear that there is a need for safe spaces in de Venserpolder. Inhabitants have a lot on their plates, as stated in the introduction residents cope with poverty and (mental) health issues. Safe spaces can help because in these spaces there is an ability to share personal experiences and express feelings, which could improve mental health (employee Bloei & Groei, personal communication, 28-02-2022). A safe space in Venserpolder is a familiar place with familiar faces. The moment new figures enter the stage, they can be seen as scary or intimidating. The introduction of a new person or project can change the perspective of inhabitants on the experience of safety in a certain space as illustrated by box 6 & 7.

Box 6: The need to feel safe: the local judge

During our first visit to the Bloei & Groei Venserpolder garden, we joined a preparation day. At the time the event started, 14:00, there were 3 women present, besides ourselves. I asked around why this might be the case, because one of the participants mentioned that there were much more women last year when the season ended. She said it might have to do with starting up again, but also because a local judge was installed just behind the Bloei & Groei (class)room, next to the garden. Therefore, police would be more present just next to the garden. The woman mentioned this as a possible reason for less women showing up. The presence of police could scare off women to come to the garden because of suspicion and mistrust in the police.

Box 7: The need for safety: experiences in 't Spinnewiel

My fellow researchers visited Buurtsalon 't Spinnewiel on a Thursday morning. This morning was announced as a coffee morning for inhabitants on a website. These coffee mornings have amongst others the goal to fight loneliness in the neighbourhood. After entering, there was no formal registration or introduction round so they both just sat down and started a conversation with a female inhabitant. Except for one man and the researcher, all participants (around 15) were female. After a short while a woman came to them, shouting: 'Who are you? What are you doing here?' Why didn't you introduce yourself?'. She clearly didn't like the presence of the researchers, while some women agreed with her, others didn't.

A space is more safe if you first get to know the people, there needs to be space and time for that (Interview 3). But only familiar faces can be insufficient to create an actual safe space, also the location itself can matter for inhabitants of Amsterdam Zuidoost (Interview 2). It can take a while before even a group of people, that knows each other, comes to a place where they haven't been before. Even the temperature of a place can create a feeling of not being welcome because it is not the temperature people are used to in their home (Interview 2).

What this section makes clear is that the intrusion of a safe space can lead to distrust and even exclusion. The moment that a stranger walks into a space that is filled with familiarities, this can cause unease for inhabitants. For that reason it is important, in order to enhance inclusivity to make sure these safe spaces are safeguarded. By not taking the safety of spaces into account people can lose trust in you and this will lead more to exclusion than to inclusion. Once the feeling of trust is broken it is hard to restore it. Like the saying suggests: *'trust arrives on a tortoise and leaves on a horse'*. Therefore, the safeguarding of safe spaces contributes to the inclusivity of the intervention for the energy transition.

6.6 Communication methods: personal connections

Personal connections are a very important way of communication in Amsterdam Zuidoost. As experienced in the field, a majority of participants at events have a personal connection with the organisers. Also communication with acquaintances can be a reason for people to join an event as box 8 demonstrates.

Box 8: Communication methods: acquaintances

At an information night of the campaign we noticed that a lot of the participants were greeted at the door by employees of Groene Hub as acquaintances. 'Hello, how are you? Good to see you again'. After some welcoming words, the information night was opened.

Inhabitants also like to share their experiences with their personal connections, as box 9 suggests.

Box 9: Communication methods: friends

The second man that we spoke with was hanging out with another man on the street. The other man was not interested in the conversation but he was very critical about the campaign. He wanted to know what the infrared panels were doing, how much they cost

and what the quality was. We could answer almost all the questions, but he still wanted to read a bit more on the internet. Unfortunately he was busy that night, so he couldn't come to the information night but he would look into the details of the panels when he had some more free time. We mentioned the possibility of coming to Groene Hub and checking out the panel himself! He said that if he liked what he found on the internet about the infrared panels he would share it with his friends.

Also key-figures, who know a lot of people in the neighbourhood and have strong connections with the community are more likely to be trusted than others, as the example in box 10 shows.

Box 10: Communication methods: key-figures

Next, it was time for the coffee/tea break. We gathered around the picnic table, and everyone got something to drink. Last week was the birthday of one of the women, so she brought a cake. It was a chaotic moment. An employee of Bloei & Groei wanted to tell a story about the origin of earth, but at the same time, one woman went to the toilet, and an employee of Stichting SES came in to ask for a table. One woman started chatting with her, walking in and out the courtyard, then the employee of Stichting SES came back with two researchers from the UVA, asking if they wanted to participate in research, and the two-year-old daughter of one of the women, was constantly talking gibberish and climbing on and off the bench.

Last, some women finished off their work in the garden for the day. I listened a bit to what the researchers were asking these women (very direct and shallow (as in they didn't follow up on the answers that were given) questions like: are you happy about the number of shops in the neighbourhood or do you feel lonely). Then I did one more task. The employee of Bloei & Groei went around with some Cavolo Nero that she harvested and asked if people wanted to take some home. I also took some with me.

What was noticed early on in the ethnographic process was the strong presence of femininity in the neighbourhood initiatives. Both the field visits to Bloei & Groei and stichting SES showed the engagement of women in community projects in the South-East. Also, the Groene Hub has its own sewing club of women from Ghana, Dominican Republic and other countries. The strength of the feminine networks has been confirmed with a key-informant in the neighbourhood. According to him, it is more often the women in Zuidoost that gather than men. An example named in the interview is that after a couple of stabbing incidents amongst youngsters, it were women that stood up for the safety of their children. Most initiatives in Zuidoost are led by women (Interview 1).

Personal networks can be used for all sorts of information exchange. WhatsApp was mentioned in one of the interviews as a way to inform people about neighbourhood developments (Interview 3). Letters from the municipality are often not read by inhabitants (employee Stichting SES, personal communication, 24-01-2022). Even messages containing opportunities to save money sent by the municipality aren’t received by all inhabitants of Amsterdam Zuidoost. An example of this is the subsidy the municipality of Amsterdam offered to households of 70 euros to invest in energy saving materials meant for energy poor households. What happened in the end is that mostly the rich people, who understand the communication method of the municipality were making use of this subsidy, instead of the household for which this subsidy was intended (Interview 2).

This section presents the important role that personal relations and networks play in interventions for inclusivity. By making use of the communication method of inhabitants the chances that people are reached is higher than when sticking to paper letters. The use of WhatsApp groups is mentioned by one of the key-informants as an important communication method. Also personal relations, acquaintances and friends, came forwards as an important communication network. Key-figures have also been identified as important for communication. Next to that, the femine network is very active in Amsterdam Zuidoost. These networks can be used in order to reach out to as many people as possible for the interventions. Information is more likely to be taken for granted when coming from a familiar face, this is where trust comes in, as mentioned earlier.

6.7 Practical examples: visual and tangible

In Amsterdam Zuidoost it is important to make the energy transition visual and tangible. Using terminology like ‘energy transition’ can already be an obstacle to inclusivity since not everybody knows the meaning (Interview 3). In general inhabitants are not very interested in energy, but this changes if the energy bill affects their wallets seriously, as the example in box 11 shows.

Box 11: Practical examples: conversation at Stichting SES

Even well-educated people [this person is a tax lawyer] do not bother to read the letters from the energy provider. She only started looking at her energy usage from the moment the gas prices increased so much, her bills increased a lot.

Visualising the effects of energy saving measures can change people's opinion on them (Interview 4). A good example of this came forward in one of the interviews. While first being sceptical about lowering the temperature of the Mosque, people started to change their opinion when they saw how much money was being spent on heating up the building. All active members are responsible for the conditions of the Mosque by means of donations. When it became clear how much personal investments in the Mosque were needed to guarantee comfort, people changed their mind quite quickly (Interview 4). This example shows that when the energy usage is made visual, it is more likely to lead to change of beliefs and behaviour, while from a distance energy can be something abstract.

The goal of bringing the energy transition closer to the people can also be reached by working with practical examples. Alternative, energy saving measures have to be introduced to people in a playful way, so that inhabitants know how they work. Without receiving instructions for energy saving measures it can very well happen that the measures won’t be used in the right way. As a consequence of this the goal of reducing energy use is missed. These demonstrations can be a fun way to interact with the public and possibly attract new interested people in an initiative, as described in box 12.

Box 12 : Practical examples: brainstorm for the campaign at Groene Hub

During the brainstorm meeting and the follow-up meeting of that, we discussed, apart from the higher objective and general atmosphere and message of the campaign, also the practicalities. It became clear that all parties (researcher, employees of Groene Hub and inhabitants) were in favour of showcasing practicalities at the demonstration day. It was

discussed to showcase the infrared panels, solar panels and a hands-on workshop on how to make 'pittenzakken', these are small bags filled up with cherry kernels that can be put in the microwave to give local and temporary warmth. Showcasing practical examples in combination with the activity of making them yourself as a visitor at the demonstration day, was done to get people in the 'action mode' instead of just listening or watching.

It can be effective to look beyond the words. Since a lot of different languages are spoken in the city district, visualising ideas and concepts has the potential to reach most inhabitants (Interview 2 & 4; employee Stichting SES, personal communication, 24-01-2022). Within the Groene Hub community a lot is being done with videos. About the different donut deals several videos were made to be shared with the community. In the videos easy language was used with a lot of visuals of the activities and/or measures related to the deals.

This section shows the importance of practical examples to include people in the energy transition. The energy transition can be something that is not related to you since it can be abstract or very theoretical. On the other hand, if the energy transition is made insightful by means of practical and visual examples people can feel more connected to it. Especially, visualising the current energy use and making demonstrations with energy saving measures came forward during the research as important. Next to that, also the power of visualisation over long bodies of text was mentioned. Visualisation has the power to reach more people and can therefore be a more inclusive communication method than long texts. Therefore practical and visual examples are identified as a condition for interventions to be inclusive.

6.8 Lightheartedness: a gentle approach

The atmosphere at almost all events that were visited in Zuidoost were so called 'lighthearted'; meaning that there was an open and friendly atmosphere in which people were warmly welcomed. While this may seem logical or natural at first, it can be identified as an important condition of interventions for Zuidoost to be inclusive.

Besides the general atmosphere at events it is also about the way people are being approached. What became clear during the flyering, but also many other field visits to Venserpolder and Zuidoost, was the importance of easy conversation starters. Simply asking 'how are you' is often a better conversation starter than 'what do you think about solar panels?' (Interview 2). A broader group of people is more likely to respond positively to a friendly and gentle approach than to terminology that is linked with the energy transition. The latter can be appealing to only a few. This is shown by an example of the fieldwork in box 13.

Box 13: Lightheartedness: handing out flyers

Different approaches were used when handing out flyers at Reigersbosmarket.
One of the first people I approached was a man waiting just in front of the supermarket for his partner to be done with grocery shopping. I greeted him and asked if he wanted to save money on his gas bill. He replied to be and said this was a scam (in Dutch 'oplichterij'). He said that when a discount was presented somebody had to gain money from this and thus he didn't want to join the campaign. He gave several examples of energy providers that made a lot of money by extorting their clients. My attempts to convince him that he was not being scammed but that I was inviting him to an event about energy saving energy practices did not succeed, thus I continued the flyering.

After some other rejections I also walked up to a group of women, some of them brought their children. After I greeted them I told them about a neighbourhood event that was taking place, there was the opportunity to meet new people there and also there would be activities for kids during the event. They first looked a little sceptical when a stranger walked up to them, but I think they mirrored my smiling face and were a little comforted by the friendly words. When they seemed more comfortable I handed them the flyers, I told them at the event practices were shown with energy saving measures. They said that it sounded nice and that they might come.

During another flyering session we approached a man that was hanging out with his friend in the sun. We introduced ourselves and the campaign we were flyering for. Also we discussed the relevance of the campaign by linking it to war between Russia and Ukraine. He replied to us 'now we are again talking about war, why can't we talk about PEACE, the only place we talk about peace is at the Eurovision Singing contest'.

A gentle approach also emphasises the importance of small steps (Interview 2, 4 & 5). For that reason it is important to start with the really first easy steps with regards to energy saving measures. This first step is awareness that should be transferred in really easy language (Interview 3). With this awareness, low threshold energy saving measures can be introduced like radiator foil and closing your doors to keep the warmth in your living room for example (Interview 2). These steps are accessible for everybody and from this point onwards a form of agency can be developed over the energy use, referring back to section 4.1.

Another point of importance is the language used in the conversation. This point refers back to section 4.2, the relation between the people in the conversation should be based on equality. When one person is acting superior over the other this can throw people off. So for example when one party expresses themselves like 'you must do this' or 'you must do that' people are more likely to reject the information. Conversation based on appreciative inquiry, meaning that you really want to get to know the other persons' interests and ideas, have a better chance of leading to engagement to the initiative (employee Groene Hub, 5-4-2022, personal communication).

To be inclusive in the energy transition, a gentle approach is a condition. This means gentle in the sense that it is important to be friendly and polite but also that the process of the energy transition is broken down to 'step by step' interventions. Bombarding inhabitants with complicated terminology and technologies has a bigger risk of scaring people away than including inhabitants into your project. For that reason it is important to take an approach that is based on getting to know the other person and sincerely being interested in the answers. Also, this has to do with the establishment of trust. It can be helpful to create low-threshold steps for inhabitants to join the transition and by these actions let them create a sense of agency over their energy use.

6.9 Youth: the new generation involved

As became clear in the fieldwork, youngsters play an important role in the neighbourhood. There are special programs for the young people but it also helps parents if activities for youngsters are being offered to reach inclusivity.

A good example of the power of youth networks is stichting SES. As described in section 5.4 stichting SES offers not just tutoring after school for youth but much more. After one of the field visits at Stichting SES, a dinner was being served with noodles and chicken. SES also hands out food to the poor multiple times a week in cooperation with local supermarkets, and they have a network among unregistered people. They seem to be in close contact with the people that have the most need. The initiator of SES said very clearly: “People trust us” (employee stichting SES, personal communication, 15-12-2021). The place is not just for youngsters, it is also a place where (adult) people come to talk about their problems. Stichting SES is a network intentionally meant for children that also reaches through their parents (Interview 3).

As box 13, also showed, mentioned youth activities lead to more interests of parents. When there is an activity for children, parents don’t have to think about a babysitter, this can lower the threshold for people with children to come to an event.

To conclude this section it can be stated that the involvement of youth in the project can increase the inclusivity of the project. Schools and/or daycare have a large network of parents that are involved. Skill development on the topic of the energy transition for youngsters will also help them become more resilient for the future. By means of activity with children not only the next generation but also their parents can get involved into the project activities. Next to that by offering activities for the youth, parents don’t have to think about hiring a babysitter. Not having the resources to hire a babysitter can be a reason for people not to come to events. So in conclusion; offering project activities also for youth is a condition of an intervention that is inclusive.

6.10 Conclusions

As discussed in this chapter, nine conditions were found for interventions that contribute to a more inclusive energy transition. The following conditions; agency, identification of the community, skill development and multiobjective, were obtained as conditions from an exploration of the literature. During data gathering in Amsterdam Zuidoost and an analysis of interviews with key-information these conditions were confirmed with the local circumstances. Apart from the conformation of the conditions found in theory also five additional conditions were found in practice. These five conditions are the following; the need for safety, communication methods, practical examples, lightheartedness and the involvement of youth. In total nine conditions are confirmed by or rooted in ethnographic fieldwork and interviews with key informants.

Chapter 7: Possible interventions for an inclusive energy transition in Amsterdam Zuidoost

This chapter aims to combine the earlier learned findings of SRQ 1 & 2 to suggest possible interventions for an inclusive energy transition in Amsterdam Zuidoost for the LIFE project. As mentioned in previous chapters the found conditions of interventions for an inclusive energy transition in Amsterdam Zuidoost are heavily intertwined. Nevertheless, to maintain oversight, the suggested possible interventions are classified per condition in this chapter. An overview of all suggested possible interventions can be found in table 5, in the first section of chapter 8. All interventions are suggested to contribute to the inclusiveness of the energy transition. Nevertheless, it is important to mention that an intervention never stands on itself, the context of the project and the way the intervention is embedded into other project activities is essential for the intervention reaching its goal. Also this chapter does not claim to present a complete overview of possible interventions. The interventions that are named are the ones that came forward during the data collection period. It can be assumed that there are more possible interventions that meet the conditions that were found. The collected data that is used for formulating this chapter comes from literature, the interviews with key-informants, ethnography and the intentional participatory observations.

7.1 Agency: local ownership

There are multiple ways to create agency for an inclusive energy transition. A combination of the following interventions in this section contribute to local ownership.

A powerful example of agency in energy projects is the SNAP project. SNAP is an acronym for Sustainable Neighbourhood Action Program, which is a neighbourhood model for urban transformation and climate action (Toronto and Region Conservation Authority, 2020; Toronto and Region Conservation Authority, 2021). This project took place in Toronto, Canada, at the San Romanoway Towers. The San Romanoway Towers in Toronto host 20% of the City's inhabitants of which some of its more socially vulnerable demographics (Toronto and Region Conservation Authority, 2020). Tenants of the San Romanoway Towers often face social or economic barriers, also they experience higher rates of isolation or marginalisation compared to the rest of the city. In this project inhabitants were actively engaged in creating the focus and execution of the program. This resulted in a long term dedication from inhabitants in the project and its outcomes. The project significantly improved energy and water efficiency and waste management (Toronto and Region Conservation Authority, 2020). By letting inhabitants play a crucial role in organisation and development of the project, the condition of agency is being met.

This section showcased the importance of agency, fostered by local ownership, by introducing the principles of the SNAP project as a whole. The following sections zoom in on specific project examples, both used within the SNAP project and beyond, to offer interventions adhering to the other conditions

7.2 Identification of the community: neighbourhoods' capacities

Several lessons can be drawn from the SNAP approach in Toronto on interventions with regards to a positive identification of the community. A very good example and possible intervention was the start of the project; a pop-up event in the park, see figure 10.

Figure 10: Pop-up event in the parc (Uyterlinde et al., 2021)

The strategy was kicked off with a pop up park in which inhabitants could formulate and visualise their dreams for the San Romanoway Towers. "The silent wall" is a visualisation technique used in Van de Kerkhof et al. (2010), participants can write freely on a wall that is covered with a large sheet of paper. Over 400 inhabitants attended this event. At the event there was no plan presented by the municipality or the project management. Instead plans were made from scratch by inhabitants. To ensure the presence of inhabitants, free food was distributed after contributing ideas to the pop-up park. Also there was a performance of live music by local musicians. The moment of the event was planned with consideration of the agenda of inhabitants. The event was planned for the end of the afternoon, just after parents were picking up their children from day-care and when people returned back home from work. The main themes that returned from this session were job and food security, with a desire to grow on-site food, site beautification and safety. This resulted in a focus group with inhabitants and a local NGO on the possibility of growing food locally. In order to build trust, quick-start projects were done (Toronto and Region Conservation Authority, 2020).

The SNAP project actively engaged with community members and fostered community leadership among project participants. A fundamental aspect for community empowerment is to understand that local perspectives are expert perspectives (Toronto and Region Conservation Authority, 2020). By means of innovative experiences and participation around topics of interest of inhabitants it was aimed to attract residents to be involved. These events also aimed to build community connections. The approach used in the San Romanoway Towers case is inline with the overarching goal of the ABCD method of McKnight & Kretzman (1996) to work in a neighbourhood from inside out, focusing on building social networks and the neighbourhood inhabitants' capacities.

Thus in order to identify the neighbourhood's capacity and be inclusive, it is important to actively reach out to citizens to find out what their strengths and desires are. This can be

done by means of sincere interactive events at the street, fostering community leadership and also engagement and participation events around a topic of interest for inhabitants can contribute to these aims. An essential part for this to work, is that the results of these events are seriously being taken into consideration and future actions and communication follows.

7.3 Skill development: building capacity & knowledge

With regards to skill development, interventions can be found in three different categories; building capacity and knowledge on 1) inclusivity, 2) energy and the energy transition and 3). skill development that goes beyond these topics. As found in SRQ 1 + 2, skill development can lead to long term engagement of citizens in urban development projects.

As the literature showed, engagement and understanding of the importance of inclusivity by a variety of stakeholders is important for the inclusiveness of the energy transition (Heffron, 2021). Therefore workshops on capacity building or other knowledge sharing events for public and private actors on inclusivity within the energy transition has the potential to increase the inclusivity of the energy transition.

Also capacity and knowledge building of inhabitants has the potential to increase the inclusivity of energy transition projects. Therefore information should be made accessible and available (Hanke et al., 2021). An example of skill development for inhabitants with regards to the energy transition, that was suggested in one of the interviews, is a workshop on how to cook on an induction cooking plate. In neighbourhoods where inhabitants are used to cooking on gas, workshops were given on how to cook with induction. In this way inhabitants get to know the new material and they will be more likely to benefit from the transition. This is needed because there are stories of households where an induction cooking plate is installed, but they still buy gas tanks to use as an energy source for their daily cooking (Interview 1).

Another way in which capacity and knowledge building can lead to long term engagement of citizens to urban development projects, is workshops that go beyond the topic of energy or inclusion. The SNAP model in Toronto also showed that capacity and knowledge building can lead to engagement in the program, see figure 11. First, multiple series of workshops took place, one was a series of workshops on sustainable carpentry to build tables and seating in the neighbourhood. The content and outcomes of this workshop were also desired by inhabitants. Secondly, there were training and workshops on edible balconies. The inhabitants learned how and which foods to grow on their balconies. Next to that, so-called community champions were profiled to reinforce participant behaviour. In the programs these community champions build, together with project staff on their capacities in order to create the possibility of them acting as empowered leaders. The inhabitants' empowered leaders are now in charge of parts of the community garden. Community leadership is important for the longevity of neighbourhood development projects. As a result of the program inhabitants even went on to find employment and pursued a career in sustainable development (Toronto and Region Conservation Authority, 2020). What this example shows is that capacity and knowledge building that goes beyond inclusion and energy transition can lead to long term engagement of citizens in urban development projects.

Figure 11: Skill development in urban development projects in Toronto, Canada (Toronto and Region Conservation Authority, 2020)

This section suggests several interventions related to skill development. To start with workshops both for professionals and inhabitants on the energy transition and its inclusivity. Next to that workshops on topics that reach beyond the topic of an inclusive energy transition but are of value for inhabitants, have the power to increase involvement of the local community.

7.4 Multi-objectivity: seeking co benefits

Also with regards to multi-objectivity, the urban development project in Toronto Canada gives some suggestions for possible interventions.

SNAP makes use of an holistic approach meaning a wide diversity of themes, see figure 12, are being dealt with in the project. By engaging with all neighbourhood interests and being open to addressing a broad range of sustainability objectives, SNAP's action plans were able to advance projects across the public and private realms (Toronto and Region Conservation Authority, 2020; Toronto and Region Conservation Authority, 2021).

Figure 12: SNAP Sustainability themes (Toronto and Region Conservation Authority, 2020)

By means of an integrated design action plan, the underutilised outdoor spaces were transformed into community development hubs with ecological function, mostly maintained by inhabitants. A community garden was installed including rainwater harvesting as well as an orchard. Building in retrofits and behaviour change programs significantly improved energy and water efficiency and waste management (Toronto and Region Conservation Authority, 2020). Making use of a neighbourhood-based approach helped to connect the towers with the surrounding community, enabling them to make use of opportunities beyond the property.

This example shows that the potential co-benefits differ from each specific case. Examples from the Dutch literature are described in Uyterlinde et al. (2021). In these cases it is suggested to combine the implementation of more greenery or improving public transport possibilities in neighbourhoods in which the energy transition is being executed. Important to mention here is that these improvements were suggested by the inhabitants of the neighbourhood themselves. The latter point refers back to the point of agency and an identification of the community. By responding to topics that are introduced by the community the chances are higher that more inhabitants would be involved.

7.5 The need for safety: safe spaces

One of the main lessons from the interviews and the ethnography is the need for safety by inhabitants. Safe spaces are familiar places with familiar faces. Therefore with each intervention it is very important to consider if a safe space might be intruded, and if so if an alternative can be found or the intervention should not take place. Because this intrusion can damage the trust, which is extremely important to build up a relationship with a neighbourhood (Uyterlinde et al., 2021).

People can feel hesitant to let strange people into their homes to suggest energy saving measures. Alternative interventions could be that inhabitants are trained to become an energy coach who can get behind the front door and suggest energy saving measures to the home owners. Another idea, suggested by energy cooperation in Zutphen, is to combine the work of debt assistance with energy coaches. Debt assistants already get access behind the front door, energy coaches can get trained to go together with the debt assistants to suggest energy saving, and thus money saving, measures.

Another possible intervention to not intrude safe spaces is an energy desk. This desk can be placed at a community centre and attended by an inhabitant. At the desk several energy saving measures are physically presented, also the desk assistance knows tips and tricks on how to save energy. This way the information and material is close to the people without intruding their private spaces, people can decide themselves whether they want to gather information at this desk or not.

This section suggests two interventions with regards to the safeguarding of safe spaces. Firstly, to let energy coaches work together with debt assistance professionals. In that way a trusted relationship is used to get beyond the front door. Secondly, it is recommended to create an energy desk in a community centre to present information close to the inhabitants but not interfere with their safe spaces.

7.6 Communication methods: personal connections

Personal connections are very important for the communication in Amsterdam Zuidoost. Therefore, in this section interventions are suggested that aim to work with and build personal relationships.

There are already strong networks in the community of Amsterdam Zuidoost. It is important to use these already existing networks for the intervention. Since, as mentioned in section 6.6, people are more likely to listen to somebody they trust. Therefore it would be of importance to identify the key-figures in a neighbourhood and build a relationship with them. The key-figures could spread information with their network to reach out to a big group of inhabitants.

Lots of communication and mobilisation is happening via women in Amsterdam Zuidoost. As came forward in one of the interviews WhatsApp is a tool that is often used for this purpose (Interview 3). Therefore it is recommended to work via women key-figures and make use of already existing networks in groups on WhatsApp. Also a religious network might be a way to connect to the neighbourhood's inhabitants (Interview 4). Words of a religious figure spread easily and can be passed on from generation to generation within families (Interview 4).

Another way to establish personal relationships is to work in an outreaching manner. This means to actively engage with the people who are not asking for it. Examples of this in practice are ringing doorbells, handing out flyers or visiting places. The advantage of this way of working over social media is that you get to know the people yourself and the other way around. Also, outreaching work can serve the interests of local residents who are unable to ask or look for information or help themselves (Omlo, 2017). In outreaching work relationships can be established in the community by recognition of faces, for that reason it is important to return to the same public places and houses (employee Groene Hub, 17-5-2022, personal communication).

Lastly, in all communication it is recommended to adapt the jargon to the target group. Energy transition is terminology which can already work repellent, as stated in section 6.2. Therefore it is important to communicate in an easy to understand language that adapts to

the experiences of the world of the inhabitants. For this reason it can help to work with familiar visual and tangible practical examples, more is explained about this in the next section.

This section suggests making use of the already existing networks in Amsterdam Zuidoost. Firstly, it is recommended to identify key-figures and build a relationship with them. Next to their network, also the femine network and the religious networks can be used to spread information. WhatsApp groups are an important way of spreading information in Amsterdam Zuidoost and therefore important to be connected to. Lastly, outreaching work like flyering or ringing doorbells can be an intervention to ensure inclusivity. All this communication has to be done in language that adapts to the local inhabitants.

7.7 Practical examples: visual and tangible

Several ideas about practical examples came forward during the research. As mentioned in section 6.6, inhabitants tend to not read long letters from the municipality. Therefore it is suggested to make visuals about information or events, examples are flyers, so without too much text and videos containing practical examples. Right now, energy and warmth is often not something visual, for example the temperature or solar panels cannot be seen from within the house. Therefore it is suggested to make heat scans that can visualise the heat that is leaving the house, an example of a heat scan can be found in figure 13.

Figure 13: Heat photo of a house (Milieu Centraal, 2022)

Apart from visualising warmth, it is also important to visualise energy. Sometimes people do not even know that they have solar panels on their roof. For that reason a board with the energy production of solar panels, possibly translated to a saved amount in euros can bring the concept of solar panels closer to the people. Most effectively this board is placed in a space where people are frequently. Another suggestion is to place smart meters that translate the energy use to a simplified understandable dashboard. The dashboard translates the energy use into a colour for example red, orange and green, where each colour represents a consumption level, see figure 14 for a representation of the dashboard. Research shows that these meters lead to a decrease in the energy use of the households (Boomsma, 2021; Vringer et al., 2021).

Figure 14: Smart meter (adapted from Vringer et al., 2021)

Next to these suggestions, excursions can be made together with inhabitants to side projects to see what kind of possibilities are out there in relation to the energy transition. These excursions can be done to create inspiration by visiting tangible and visual examples (Raworth & Stikker, 2022; Toronto and Region Conservation Authority, 2020). In the case of SNAP in Toronto, Canada, inhabitants were taken on local tours through the city to gather inspiration for the project at San Romanoway Towers (Toronto and Region Conservation Authority, 2020).

This section suggests several interventions in relation to practical examples. First the use of visuals over long bodies of text. Then also heat photos and smart meters were introduced as a way of visualising energy loss and use. Lastly, excursions can be made to visit side projects with inhabitants to create inspiration.

7.8 Lightheartedness: a gentle approach

What came forward during the fieldwork, and what is confirmed by the interviews with key informants is the importance of lightheartedness in the approach of an intervention. This means that there should be an emphasis on the personal relationship, friendliness and fun involved in an intervention.

Ways to work on this gentle approach could be by means of a serious game on the energy transition. Serious games can create an open and safe environment that is inviting to explore, experiment and learn (Gee, 2003; Raphael et al., 2010). Real world issues are imitated in a serious game. Participants can try-out, discover, test, fail and learn in this mimic real world, which is also facilitated in planning, policy making and governance (Gugerell & Zuidema, 2017). Serious games have the potential to develop cooperation between different stakeholders and create a mutual understanding between them (Marne et al., 2012). By means of a serious game for both policy makers, project developers and inhabitants, participants can come to understand the different perspectives and views of stakeholders in the energy transition, which might lead to a better understanding between the different parties and thus to a more inclusive energy transition, an example is shown in figure 15.

Figure 15: Serious game on the energy transition (Servicepunt Duurzame Energie, 2022)

Another suggestion to develop interventions with a gentle approach is to start in the public space. In contrast with intervention in the house, which can easily be felt intrusive and too personal, interventions in the public space seem to cause less resistance. Without making a direct investment a visitor of the public space can still encounter the positive consequences of an energy saving measure. In this way people can get to know the measure in a more approachable and positive way before instalment in their own homes. Another more contemporary way to showcase energy saving measures in the public space is a market. This market, or festival, can attract curious neighbours. An example of this can be found in figure 16, at this market energy saving materials are distributed for free.

Figure 16: Market with energy saving measures

Moreover, in order to develop a gentle approach the role of the housing corporation has to be investigated. A lot of roofs in Amsterdam are owned by housing corporations and have the potential to carry solar panels (De Boer et al., 2020). These corporations house people living in energy poverty. The housing corporation could be the link between the green energy companies and the residents (De Boer et al., 2020). A construction like this already exists in Zuidoost. In this specific case a couple of inhabitants invested in solar panels in the neighbourhood, all households from this neighbourhood could join the initiative and receive renewable energy with a discount (employee de Groene Hub, personal communication, 15-3-2022).

Lastly, it is of importance to celebrate when something has been done or worked out. This is important because, if this element is missing in the process, inhabitants that were not involved in the project might not be aware of what happened. This can cause a feeling of exclusion for inhabitants in relation to the project. An example of this was when teachers at a school made a phone call to a company that installed solar panels on the roofs of schools, they wanted to apply for solar panels on the roof of their school. After a search on the database of the company it turned out that there were already solar panels installed on the roof of this particular school. This example supports the idea of a celebration or clear notification of success when a project is finished.

This section presents several interventions for an inclusive energy transition. All interventions presented in this section have something to do with a gentle approach or lightheartedness. A serious game is suggested as a fun and gentle way to introduce stakeholders to each other and their wishes. Next to that it is suggested to start with energy saving measures in the public space and to host an energy market, also the role of housing associations has to be explored. Lastly, celebrations of successes of projects in the neighbourhood are important to make inhabitants aware of the milestones that are reached.

7.9 Youth: the new generation involved

With regards to youth, multiple suggested interventions were found during the time span of this research.

During one of the interviews the suggestion came forward to develop and spread books for children with information about the energy transition (Interview 3). This was suggested as a way to reach out to children and parents in a playful way. A prerequisite for this potential intervention is that information about the energy transition is put in easy to understand language.

Also, during the intentional participatory observations multiple actions with relation to youth and the energy transition were found. In one district of Amsterdam a colouring competition was held for children, the colouring page had to do with the campaign about saving energy. To join the colouring competition the colouring page had to be put up against the window so that people passing by could see them. The winning participant would get a ticket to the movie and an ice cream. In this way youth was involved in a campaign about energy saving.

Another example was a series of innovative classes about energy and energy savings in a high school. Another suggestion is to work with schools on energy savings measures

together with children. In this way children are forced to think creatively about energy saving measures themselves. During the class flyers were handed-out about possible energy saving interventions in the house. The youth could bring the conversation about saving energy into the household by taking these experiences home. This is not the first time that the youth is involved in the sustainable development of the public space (Uyterlinde et al, 2021; Van Eijk, 2003).

This section suggests the following interventions on the involvement of the next generation. Children's books and a colouring competition on the energy transition have the potential to reach youth and also parents. Next to that education in schools on the energy transition can prepare the next generation for the future but also has the potential of educated youth bringing the topic home to their families.

7.10 Conclusions

In conclusion several interventions are suggested that can increase the inclusivity of the LIFE project in relation to the energy transition. An overview of the interventions, related to the conditions can be found in table 5. To refer back to the introduction of this chapter it has to be understood that an intervention does not stand on its own. The effects of an intervention have everything to do with how the intervention is embedded in the project and related to other project activities and the project management.

Chapter 8: Discussion

In this chapter the meaning, importance and relevance of the results of this research are discussed. The first section discussed the meaning of the results, the second section the implications of these results. The third section discusses the limitations of the research, the fourth section describes possible future research direction. In the last section the interdisciplinarity of the research is being reflected upon.

8.1 Interpretations

This research has developed a framework for inclusive intervention that fosters the energy transition in Amsterdam Zuidoost related to the LIFE project. An overview of the conditions, of which this framework consists can be found in table 5, along with possible interventions for each condition. After that the findings are contextualised in previous research and theory.

The conditions that were found in theory, as can be seen in Table 5, were also found in practice. Also additional conditions were found in empirically collected data by means of ethnographic research and confirmed with interviews with key-informants in the region. Since the conditions that were found in both theory and practice are heavily interlinked with each other, it is expected that the interventions do not stand on their own either. While the different interventions can be executed solely, the impact on the inclusiveness of the transition is expected to be higher when they are combined. It would be especially interesting to combine interventions that are classified for different conditions to cover most key-elements that have been identified in this research.

Reflecting back on the conditions that were found in practice, they can be linked to existing literature on transition management as well. Trust in institutions and trust between different stakeholders will greatly influence the result of rural development. Trust building is essential because it will facilitate the dialogue and productive cooperation between the different stakeholders (Eshuis & Stuiver, 2005; Menconi et al., 2017). These statements resemble the conditions of safety and personal relationships, since trust is inherent in safe spaces and personal relations. Therefore this fieldwork shows, as the literature confirms, the importance of trust building for an inclusive energy transition. This resonates with the earlier definition of a inclusive society which was described as a society that fosters mutual trust, section 3.1 As mentioned earlier, the process of trust building takes time and in urban development projects it can be fostered by approachable people in the neighbourhood. Also, skill development has the potential to enhance trust (Mandarano, 2015).

Table 5: Overview of conditions and related possible interventions for an inclusive energy transition in Amsterdam Zuidoost

Condition	**Explanation**	**Possible interventions**
Agency: local ownership	*The feeling of ownership has the potential to engage citizens long term to the project. This will contribute to its inclusivity.*	Involvement of inhabitants in plan development Desires of inhabitants taken seriously
Identification of the community: neighbourhoods' capacities	*By means of an approach based on equality and looking for the opportunities instead of deficiencies of the neighbourhood, inclusivity can be enhanced.*	Pop-up park with a silent wall Fostering community leadership
Skill development: building capacity & knowledge	*Capacity and knowledge building has the potential to engage inhabitants in the project for a longer term. Also their involvement has the potential to increase with workshops and skill training, therefore it increases the inclusivity of the project.*	Trainings on inclusivity Trainings on energy saving measures (energiecoach) Skill development beyond inclusivity and energy
Multi-objectivity: seeking co-benefits	*The usage of multiple objectives in an intervention can increase the amount of people that are involved and in favour of a certain measure. For that reason multi-objectivity can contribute to inclusivity.*	Combine energy measures with local challenges
The need for safety: safe spaces	*Safe spaces are very important in the Amsterdam Zuidoost community. Therefore they need to be taken into account when intervening in the neighbourhood.*	Start with the public space Energy desk in community centre
Communication methods: personal connections	*Personal networks are essential in the communication in Amsterdam Zuidoost. For that reason these communication methods are identified as a condition for an intervention that aims to be inclusive.*	Existing networks Key-figures Religious community
Lightheartedness: a gentle approach	*While complicated technology or terminology can scare people away, and therefore be excluded. A gentle approach, in which small steps are taken has the potential to include more people in the transition.*	Serious game Energy market Celebrations Investigate the role of housing association
Practical examples: visual & tangible	*Since visual and tangible examples speak more to certain people than (long) text, the usage of them increases the inclusiveness of communication.*	Heat photos Information board Smart meters Excursions
Youth: the new generation involved	*The involvement of the next generation has several benefits with regards to inclusivity. Firstly, there is the network around the youth that can reach the community within families. Secondly, by involving youth also the next generation can be included in the energy transition itself.*	Children books Colouring competition Classes at schools Energy saving measures at schools

With regards to lightheartedness: a gentle approach, it is supported by literature to develop flexibility in participatory projects (Chilvers & Kearnes, 2016; Menconi et al., 2017). This entails that there are multiple possibilities of joining the projects for a diversity of participants in a different stage of involvement (Menconi et al., 2017). Flexibility and fluidity of the process is seen as a strength instead of a weakness. Chilvers and Kearnes (2016) propose a framework for remaking participation that suggests participation should be: 'reflexive and experimental', 'open to wider systems and ecologies' and 'responsible [with respect to] future effects and social/ethical implications'. These findings suggest that the approach to a neighbourhood shouldn't only be lighthearted but also flexible and adaptable to the circumstances in the neighbourhood. Chilvers and Kearnes (2016) argue the engagement to be 'institutionally responsive' meaning that the approach should always be reflexive and consider the wider ecosystems and communities in the approach, also when executing the project. Therefore moments of reflection during the project, possibly with outsiders are essential for good development.

With regards to the condition of practical examples, Hegger et al. (2012) indicate the presence of specific resources like boundary objects, as a success factor for regional climate change adaptation projects. Boundary objects are concepts that can be adapted to a certain circumstance. Boundary objects can generate discussion on a certain topic between participants because participants witness the same thing but have different perspectives on the object (Hegger et al. 2012). Also, these objects can have the capacity to link diverse stakeholder groups, roles, and disciplinary backgrounds within and across organisations (Benn et al., 2013). In addition to this, Menconi et al., (2017) argue that the recognition of empirical knowledge on the topic of all stakeholders also contributes to optimization of the development. From this body of literature it seems clear that practical examples or physical objects context specifically can help stakeholder engagement in development projects, like the fieldwork in this research also suggested.

The condition of including youth for development projects, was also named by Mendez et al. (2017) and Cuéllar-Padilla & Calle-Collado (2011). Mendez et al. (2017) emphasise the participation of youth which has to be combined with intergenerational interaction for innovation in a project. The location of a school was identified by Cuéllar-Padilla & Calle-Collado (2011), as a place where communities gather and new initiatives and ideas can spread. These scholars underline the importance of the suggested possible interventions that were named in section 7.9 on youth: the involvement of the new generation.

8.2 Implications

This thesis is written from a perspective that was based on a theoretical foundation in which inclusivity was conceptualised. In this section it is aimed to critically assess this theoretical foundation, with other approaches to the concept of inclusivity in the energy transition. It exposes the paradox between an accelerated transition and an inclusive transition, while also arguing for a way to overcome this paradox.

The conceptualization stated that an inclusive energy transition means ensuring the availability of sustainable, reliable and affordable energy services for all members of society. Additionally, taking into account earlier statements on inclusion, it means actively working on

creating an inclusive transition, in which there is a rich diversity, both on surface and deeper level, in all facets of the transition. Academia and practitioners acknowledge the importance of an inclusive transition. As Frans Timmerman wrote in the foreword of the book 'Shaping an Inclusive Energy Transition' (Weijnen et al., 2021). *"Europe aspires to be the first climate-neutral continent by 2050. This goal is necessary. The threat of climate change is existential. It is ambitious. Its achievement requires overhauling what and how we produce and consume. It is feasible if we are all fully committed to it and we make sure no one is left behind. The transition will be fair or it will not happen."* This resonates with the United Nations Agenda for Sustainable Development, as mentioned earlier. There the goal is formulated as 'Achieving Sustainable Energy for All' (UN, 2022).

Scholars also explore the friction to which inclusivity can lead, especially emphasising this in an accelerated energy transition (Skjølsvold and Coenen, 2021). As suggested by Skjølsvold and Coenen (2021) an accelerated transition opposes an inclusive one. This paradox is based on the work of Rosa (2013) who notices that the pace of social and technical innovations has accelerated, which demands for more frequent decision making. This results in the fact that democratic processes are no longer accelerators for transition, but brakes (Rosa, 2013). Democratic processes are time consuming, while time is scarce in highly accelerated transitions (Skjølsvold and Coenen, 2021). Considering the speed of climate change and its disastrous consequences it is relevant to question if processes to enhance inclusivity slow down the transition. The following paragraph will explain an argument why a transition that is now focused on inclusivity can also not be accelerated.

As stated in the introduction the energy transition risks increasing social inequality. Another issue with regards to increased inequality and an accelerated transition, is the tension between the core and periphery. While technological innovation has led significantly to increased levels of well-being, prosperity and climate transition pathways, scientific literature also displays the negative consequences of these innovations (Biggi & Giuliani, 2021; Vinsel & Russell, 2020). It is suggested that innovation contributes to political polarisation and socio-economic inequality. The city region, the core, benefits from development prospects while the peripheral hinterland is unable to pick the fruits from the development outcomes. Which can result in tensions between the core and the periphery and has given a wave to political populism (Dijkstra et al., 2020; Rodríguez-Pose, 2018; Skjølsvold and Coenen, 2021). Political populism is often not in favour of the energy transition and sometimes even denies the existence of a climate crisis at all. For that reason the uprising of political populism has the potential to stop the energy transition in countries completely. This is an extreme scenario but it does present the argument clearly that people that are left-out of a transition, can oppose later, which will cause only delay in the process.

These dilemmas ask for the recognition, analysis and empowerment of poly-centric government and a greater engagement with the excluded (Skjølsvold and Coenen, 2021). An example of greater engagement with the excluded on governmental level is the initiation of a citizen assembly. A citizen assembly aims to represent society by socio-demographic criteria like gender, age (from 16 – 80+), educational background, place of residence and socio-professional category. These citizens, who do not have to get re-elected or are influenced by lobbyists, are involved in information sessions and working groups with experts (academia, professionals in the field, experience experts) in order to get a complete understanding of a topic. After an intense process of dialogue between the participants and

the experts this leads to a decision making process by the citizens (Rovers, 2022). In this way a citizen assembly is a tool that can contribute to inclusivity on a governmental level.

8.3 Limitations

This section presents the scope and limitations of this research. First it is investigated how the chosen definition of inclusivity has influenced this research. Then the origination of the literature review is critically assessed, the characteristics of the ethnographic fieldwork are discussed and how this might have affected the results and lastly the coding of the fieldnotes and the interviews is being discussed.

As mentioned in the former sections, the concept of inclusivity can reach beyond the urban development project itself. For an inclusive energy transition, inclusivity should be aimed for beyond the projects and has to be developed in governmental sense as well (Skjølsvold and Coenen, 2021). Also, geographically seen inclusivity within an urban development project with inhabitants can reach beyond the borders of the project itself. This research solely focuses on the inclusivity of the inhabitants within the border of the urban development project. The implications of the interventions that reach beyond the participants that directly interact with them are not taken into account. It is important to mention, but beyond the scope of this study, these interventions can have (positive or negative) consequences for the periphery of the Netherlands but also in other places in the world, like the global south.

With further regards to the theoretical basis of this thesis the literature review was an explorative, instead of a systemic one. The snowballing method might have caused bias in the selection of articles that were used in this thesis. For that reason opposing bodies of literature might have been missed due to this researching method.

Another important point to mention here is the role of the researcher(s). The fact that the researcher is a young, white, native Dutch speaking woman has most probably affected the interactions in the ethnography. On top of that, the timeline of the ethnographic fieldwork is relatively short to get a deepened understanding of the communities and its relations and interests. A combination of these factors might have caused slightly superficial interactions and relationships with inhabitants during the ethnography. Next to that, the fact that a group of researchers has executed the ethnographic fieldwork has affected the results. To start with, all researchers interact and interpret experiences differently, which literally coloured the fieldnotes. Also the presence of different faces might have caused difficulties in building trust in the community during the ethnography.

In this discussion finally some attention goes out to the inductive nature of the coding of fieldnotes. Apart from the codes that were built up from the theoretical chapter on conditions of interventions for an inclusive energy transition, also conditions were found in the fieldnotes based on inductive coding. For the inductive coding the researchers created their own coding based on the fieldnotes. An inductive content analysis involves some level of subjective interpretation, which can affect the results' validity and reliability. The validity of the research could be affected because of the researcher's subjectivity. The validity is assessed however because the empirical findings do correspond with existing literature of the concept. In order to increase validity a multitude of researchers could code the

fieldnotes. Moreover, the reliability will increase by increasing the number of fieldnotes and again the number of researchers that assess them.

8.4 Future research directions

This section presents several recommendations for scientific studies to follow up upon.

Firstly, it is recommended to execute a systematic literature review on the topic of inclusiveness in the energy transition. Since the literature review in this research was explorative, a systematic review could support the current framework or suggest differently. Next, it is recommended to continue the ethnography for a longer time and with a higher intensity if this is possible. This is recommended to get a better understanding of the community, build connections and collect more insights. Also, a more frequent appearance in the community has the potential to lead to more trust between the researchers and the community that is being researched.

Further research is needed to investigate how and if the suggested interventions can be integrated within the LIFE project. Once interventions are executed it would be valuable to measure the impact of the different suggested interventions. This would entail monitoring the amount and type of participants and how they experience and/or benefit from the intervention.

It would be interesting to also look beyond the scale of the neighbourhood and see how the interventions affect the rest of the city. Therefore it would be suggested to test the framework on other neighbourhoods, it would be of value to see if the same conditions are found there and if not, what other conditions are identified. On top of that it is worth investigating if this framework is also applicable on other transitions related to water, soil or food.

Lastly, it is important, as became apparent in this discussion, to not only consider inclusivity at the urban development level but also on a governmental level. Therefore it has to be researched which governmental applications like policies can lead to more inclusivity for an inclusive energy transition in higher level decision making organs.

8.5 Reflection on the interdisciplinarity of the research

This section reflects on the interdisciplinarity of the research. Although the research can be logically interpreted as interdisciplinary at first sight, during the execution of the research it was felt like the social issues to be tackled seemed more predominant than the technical ones. While the energy transition is both a social and a technical challenge, it became clear that sometimes, when we want to talk about energy, we should not talk about energy. Technical innovation can sound like promising solutions to a problem that is as pressing as the climate crisis, but we should not forget about people’s power. The main take away from this ‘interdisciplinary’ research is that it can be fruitful to let go of all the pre-defined technical possibilities and really listen to and learn from the inhabitants about what they have to tell about their own neighbourhood. In this way a real inclusive energy transition can take place, both on the technical and the social level. Because a transition without people is no transition.

Chapter 9: Conclusion

This thesis started out with the research objective: *to develop a framework of interventions for the LIFE project that contribute to a more inclusive energy transition in Amsterdam Zuidoost.* This was translated into the following general research question: *"What are the conditions for interventions that can contribute to a more inclusive energy transition in Amsterdam Zuidoost?"* Which was then subdivided into a theoretical and empirical question, the results of both came together in the answer on the third SRQ, which suggests interventions for the LIFE project to contribute to a more inclusive energy transition. In this chapter an answer is given on all research questions.

The first research question *"What conditions of interventions for an inclusive energy transition can be drafted from theory?"* is answered by four conditions that were found. Firstly, agency is identified as an important condition for interventions that contribute to an inclusive energy transition. Agency is also defined as responsibility and local ownership for inhabitants in urban development projects. Agency gives inhabitants the potential to contribute to the developments, also agency can create a greater form of engagement to the program. Especially for inclusivity, as stated in the conceptualization it is essential that the wishes and the desires of the excluded are put at the centre of the developments. Therefore agency is identified as the first condition of interventions for an inclusive energy transition.
The second condition that was found in literature is the identification of the community. In order to develop a relationship based on equality with the inhabitants it is important to identify the neighbourhoods' capacities. Instead of an approach that is based on deficiencies the neighbourhood has to be identified by the capacity that is there. This is needed to develop an urban development project that builds on the skills and knowledge of inhabitants.
Thirdly, the condition of skill development was found as a condition of interventions that contribute to an inclusive energy transition. Skill development entails both knowledge and capacity building. As found in the literature, skill development on the topic of inclusivity and measures for the energy transition can contribute to a more inclusive energy transition but also skill development beyond those topics can increase the engagement of the public in the urban development project.
Fourthly and lastly, multi-objectivity was found as a condition for interventions that contribute to a more inclusive energy transition. When the intervention reaches further than 'just' contributing to the energy transition higher engagement is expected. The potential of wealth generation is an objective that is mentioned by several scholars. Also the possibility to couple the intervention with improvements of the neighbourhood with regards to social cohesion, greenery or health are suggested.

The second research question: *"What conditions of inclusive interventions can be drafted from empirical data collected in Amsterdam Zuidoost?"* is answered by the theoretical conditions that were found in practice and those are joined by five empirical found conditions.
To start with agency, during the fieldwork and the interviews the point of agency was touched upon multiple times. In one of the case studies, participants of the initiative all owned a physical part of the project. This local ownership created engagement and long term commitment by the participants to the initiative. Next to that also in another case study, agency was created by the open form of project development, co-creation was used as a

tool to do this. The importance of agency was also confirmed by interviews with multiple key-informants.
Secondly, the condition of the identification of the neighbourhood was confirmed in the interviews with key-informants and also found in the case studies. During the interviews it became clear that an equal partnership needs to be developed between inhabitants and other stakeholders in order for the neighbourhood to improve. In one of the case studies this was put into practice by a longer conversation with an inhabitant to identify her capacity in order to see what she could contribute to the initiative and the community.
The third condition of skill development was also found in multiple case studies. In Amsterdam Zuidoost, and Venserpolder specifically, a lot of attention goes out to knowledge and capacity building. It was found that both skill development on the topic of energy saving is being offered as well as skill development beyond this topic. A lack of knowledge is identified as a reason for high energy consumption by one of the key-informants, also a lack of knowledge can lead to exclusion of inhabitants because the terminology is not understood.
Fourthly, the condition of multi-objectivity was identified in practice. In the fieldwork it became clear that the topic of energy can be something far away for inhabitants of Amsterdam Zuidoost. Therefore it can be beneficial to couple energy saving with other points of interests like saving money. In the case studies it also came forward that job creation or network building can be potential benefits of the energy transition.

In addition to the theoretical conditions that were found in practice also five conditions for interventions for an inclusive energy transition in Amsterdam Zuidoost were found solely empirical, with the first being the need for safety.
Several encounters during the fieldwork stressed the importance of a safe space for the inhabitants of Amsterdam Zuidoost. A safe space entails a space with familiar faces in which emotions and experiences can be freely expressed, also the location matters if the space can be seen as safe.
Next to this, the condition of personal connections was identified as a condition for interventions that contribute to a more inclusive energy transition. Personal connections are important in Amsterdam Zuidoost, and a distinction was made between acquaintances, friends and key-figures. It was noted that Amsterdam Zuidoost has a very strong network of femine figures. Also the importance of Whatsapp groups was mentioned in one of the interviews.
Practical examples were also identified as a condition. Since language can be limited for communication about the energy transition, because of misunderstanding and language barriers, practical examples are suggested to have an additional value. Visuals like movies or pictures can reach more inhabitants than long letters, people don’t tend to read those. Also the introduction of tangible examples have the potential to teach more than just words.
Lightheartedness was also found as a condition of interventions that could lead to an inclusive energy transition. The topic of energy can be overwhelming or boring to people, also nowadays energy and gas use is easily linked to the war in Ukraïne which can cause negative associations for people. For those reasons it is important to build in a gentle, step by step, approach which is explained in easy to understand language.
Lastly, the condition of involvement of the new generation was found to contribute to a more inclusive energy transition. In one of the case studies it became clear that youth can play an important role in the community. A network intentionally meant for children also reaches through their parents.

To answer the third research question: *“Considering the conditions of interventions for an inclusive energy transition found in SRQ1 & SRQ2, what specific interventions can contribute to a more inclusive energy transition in Amsterdam Zuidoost?”* different interventions are categorised per condition that was found in SRQ1 and SRQ2. For the first condition of agency it is recommended to involve inhabitants in the project. It is important to consider when and how inhabitants can play a role in the developments. A suggested intervention to identify the community is to install a pop-up park in the neighbourhood with a silent wall to collect interests, desires and wishes of the inhabitants. With regards to the condition of skill development it is suggested to host a training to the project management on inclusivity and training on energy saving measures for and skill development that reaches beyond energy for inhabitants. The latter has the potential to create long term engagement to the project. In order to be multi-objective it is important that the energy measures are combined with local challenges. These local challenges have to come from the community itself. To consider the safe spaces in the community it is recommended to start with the energy saving measures in the public spaces. The threshold to get in touch with the measures is lower this way than new instalments in private houses. Also an energy desk in the community centre could be a fitting intervention considering the need for safety. With regards to communication methods it is recommended to make use of existing networks, key-figures and the religious community. In order for the interventions to be lighthearted the following interventions are suggested: a serious game, an energy market, celebrations of successes in general and to investigate the role of the housing association. Heat photos, information boards, excursions and smart meters are interventions related to the condition of practical examples. Lastly, considering the condition of youth, interventions that were found were children books on energy, a colouring competition, energy classes at school and energy saving measures at schools.

Overall to answer the GRQ: “*What are the conditions for interventions that can contribute to a more inclusive energy transition in Amsterdam Zuidoost?”* nine conditions have been found that can be found in table 5. Also, this table shows the suggested interventions that are inline with these conditions. The most important finding of this thesis is the importance of trust for an inclusive energy transition in Amsterdam Zuidoost.

References

AMS Institute. (2021). Energy Lab Zuidoost [PDF]. Retrieved 4 February 2022, from https://www.ams-institute.org/urban-challenges/urban-energy/energy-lab-zuidoost/.

Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of planners, 35*(4), 216-224.

ATLAS.ti. (2018). v3.17.3-2022-04-12. ATLAS.ti Scientific Software Development GmbH. Qualitative Data Analysis. Retrieved from http://atlasti.com/

Baart, J. (2019). *Energie voor leefbare wijken: Onderzoek naar de koppelkansen tussen de warmtetransitie en het verbeteren van de leefbaarheid in kwetsbare wijken*. *Master City Developer*. Retrieved from http://hdl.handle.net/2105/49389

Barr, S., & Devine-Wright, P. (2012). Resilient communities: sustainabilities in transition. Local Environment, 17(5), 525-532.

Benn, S., Edwards, M., & Angus-Leppan, T. (2013). Organizational learning and the sustainability community of practice: The role of boundary objects. *Organization & Environment*, *26*(2), 184-202.

Biggi, G., & Giuliani, E. (2021). The noxious consequences of innovation: what do we know?. *Industry and Innovation*, *28*(1), 19-41.

Bloei en Groei - Bloei & Groei. (2022). Retrieved 3 May 2022, from https://www.bloeiengroei.org/

Boomsma, M. (2021). On the transition to a sustainable economy: Field experimental evidence on behavioral interventions. CentER, Center for Economic Research. https://doi.org/10.26116/center-lis-2113

Borenstein, S., & Davis, L. W. (2016). The distributional effects of US clean energy tax credits. *Tax Policy and the Economy*, *30*(1), 191-234.

Breukers, S., Mourik, R. M., Van Summeren, L. F. M., & Verbong, G. P. J. (2016). Giving Voice to Residents. *Environmental Justice and Sustainable Transformations of Dutch Social Housing Neighbourhoods. Eindhoven*.

Buurtsalon Zuidoost. (2022). Retrieved 3 May 2022, from https://www.buurtsalonzuidoost.nl/over-ons/

Carley, S., & Konisky, D. M. (2020). The justice and equity implications of the clean energy transition. *Nature Energy*, *5*(8), 569-577.

CBS. (2021). *Kerncijfers wijken en buurten 2021* [EXCEL]. Retrieved 21 February 2022, from https://www.cbs.nl/nl-nl/maatwerk/2021/31/kerncijfers-wijken-en-buurten-2021.2

Chilvers, J., & Kearnes, M. (2016). Science, democracy and emergent publics. *Remaking participation: Science, environment and emergent publics*, 1-28.

Chin, G., & Culotta, E. (2014). What the numbers tell us. *Science*, *344*(6186), 818-821.

Cocratos (2022). OVER COCRATOS. Retrieved 25 April 2022, from https://www.cocratos.nl/over-cocratos/

Correljé, A. (2021). Perspectives on Justice in the Future Energy System: A Dutch Treat. In *Shaping an Inclusive Energy Transition* (pp. 55-72). Springer, Cham.

Cross, J. (2019). The solar good: energy ethics in poor markets. *Journal of the Royal Anthropological Institute*, *25*(S1), 47-66.

Cuéllar-Padilla, M., & Calle-Collado, Á. (2011). Can we find solutions with people? Participatory action research with small organic producers in Andalusia. *Journal of Rural Studies*, *27*(4), 372-383.

De Boer, B., Olierook, B., Kop, S., Swens, J., & de Vlaam, A. (2020). *Potentieanalyse Sociale Energie* [Ebook]. Greenchoice.

De Breed, E. (2019). *De Vrouwen van Venserpolder* [Film]. 2Doc.

Deconinck, G. (2021). Decentralised Control and Peer-To-Peer Cooperation in Smart Energy Systems. In *Shaping an Inclusive Energy Transition* (pp. 121-138). Springer, Cham.

Dijkstra, L., Poelman, H., & Rodríguez-Pose, A. (2020). The geography of EU discontent. *Regional Studies*, *54*(6), 737-753.

Eijk, P. J. (2003). *Vernieuwen mét water: Een participatieve strategie voor de gebouwde omgeving*. Eburon.

ENoLL. (2006). *What is a Living Lab? European Network of Living Labs (ENoLL)*, Retrieved 2 August, 2016, from http://www.openlivinglabs.eu/FAQ

Eshuis, J., & Stuiver, M. (2005). Learning in context through conflict and alignment: Farmers and scientists in search of sustainable agriculture. *Agriculture and human values*, *22*(2), 137-148.

Farrell, D. M., Suiter, J., & Harris, C. (2019). 'Systematizing' constitutional deliberation: the 2016–18 citizens' assembly in Ireland. *Irish Political Studies*, *34*(1), 113-123.

Fiorina, M. P. (1999). A dark side of civic engagement. *Civic engagement in American democracy*, 395-425.

Fishman, J. A., Cooper, R. L., Newman, R. M., & Ma, R. (1971). *Bilingualism in the Barrio* (Vol. 1). Indiana University.

Fung, A. (2006). Varieties of participation in complex governance. *Public administration review*, *66*, 66-75.

Gee, J. P. (2003). What video games have to teach us about learning and literacy. *Computers in entertainment (CIE)*, *1*(1), 20-20.

Geels, F. W. (2005). The dynamics of transitions in socio-technical systems: a multi-level analysis of the transition pathway from horse-drawn carriages to automobiles (1860–1930). *Technology analysis & strategic management*, *17*(4), 445-476.

Geels, F. W. (2019). Socio-technical transitions to sustainability: a review of criticisms and elaborations of the Multi-Level Perspective. *Current opinion in environmental sustainability*, *39*, 187-201.

Gemeente Amsterdam. (2020). *Principe Nota Venserpolder* [Ebook].

Gemeente Amsterdam. (2021). *Resultaten van online vragenlijst in Venserpolder onder woningeigenaren en huurders* [Ebook]. Gemeente Amsterdam. Retrieved 3 March 2022, from https://www.amsterdam.nl/wonen-leefomgeving/duurzaam-amsterdam/aardgasvrij/aardgasvrije-buurten/venserpolder-aardgasvrij/.

Graugaard, J. D. (2012). A tool for building community resilience? A case study of the Lewes Pound. Local Environment, 17(2), 243-260.

Grossmann, M., & Creamer, E. (2017). Assessing diversity and inclusivity within the Transition movement: an urban case study. *Environmental Politics*, *26*(1), 161-182.

Gugerell, K., & Zuidema, C. (2017). Gaming for the energy transition. Experimenting and learning in co-designing a serious game prototype. *Journal of Cleaner Production*, *169*, 105-116.

Gusterson, H. (2008). Ethnographic research. In *Qualitative methods in international relations* (pp. 93-113). Palgrave Macmillan, London.

Halse, J., & Boffi, L. (2020). Design interventions as a form of inquiry. In *Design anthropological futures* (pp. 89-103). Routledge.

Hanke, F., Guyet, R., & Feenstra, M. (2021). Do renewable energy communities deliver energy justice? Exploring insights from 71 European cases. *Energy Research & Social Science*, *80*, 102244.

Harrison, D. A., Price, K. H., & Bell, M. P. (1998). Beyond Relational Demography: Time and the Effects of Surface- and Deep-Level Diversity on Work Group Cohesion. The Academy of Management Journal, 41(1), 96–107. https://doi.org/10.2307/256901

Heffron, R.J. (2021). Inclusive Energy Transition. *Commonwealth Sustainable Energy Transition Series* 2021/01, Commonwealth Secretariat, London

Hegger, D., Lamers, M., Van Zeijl-Rozema, A., & Dieperink, C. (2012). Conceptualising joint knowledge production in regional climate change adaptation projects: success conditions and levers for action. *Environmental science & policy*, *18*, 52-65.

High, M. M., & Smith, J. M. (2019). Introduction: The ethical constitution of energy dilemmas. *Journal of the Royal Anthropological Institute*, *25*(S1), 9-28.

Hirt, S. A. (2012). *Iron curtains: Gates, suburbs and privatization of space in the post-socialist city* (Vol. 27). John Wiley & Sons

Hopkins, R. (2011). *The transition companion: Making your community more resilient in uncertain times*. Chelsea Green Publishing.

Huygen, A. & Fortuin, K. (2021). ABCD: Naar veerkrachtige gemeenschappen. Over gemeenschappen, impact en handelingsperspectieven voor gemeenten. Utrecht: LSA Bewoners

Itten, A. V., Sherry-Brennan, F., Sundaram, A., Hoppe, T., & Devine-Wright, P. (2020). State-of-the-art report for co-creation approaches and practices with a special focus on the sustainable heating transition: Shifft work package 2 deliverable 2.1. 1.

Journal of Social Intervention: Theory and Practice: About: Scope & Focus. (2022). Retrieved 13 June 2022, from https://www.journalsi.org/about/

Klösters, M., de Koning, N., Dreijerink, L., Tigchelaar, C., Bijvoet, J., & Kooger, R. (2020). Samenwerken in de wijkaanpak: ervaringen met bewonersparticipatie in acht proeftuinen aardgasvrije wijken.

Kretzmann, J., & McKnight, J. P. (1996). Assets-based community development. *National civic review*, *85*(4), 23-30.

Lennon, B., Dunphy, N. P., & Sanvicente, E. (2019). Community acceptability and the energy transition: a citizens' perspective. *Energy, Sustainability and Society*, *9*(1), 1-18.

Mandarano, L. (2015). Civic engagement capacity building: An assessment of the citizen planning academy model of public outreach and education. *Journal of Planning Education and Research*, *35*(2), 174-187.

Marne, B., Wisdom, J., Huynh-Kim-Bang, B., & Labat, J. M. (2012, June). A design pattern library for mutual understanding and cooperation in serious game design. In *International Conference on Intelligent Tutoring Systems* (pp. 135-140). Springer, Berlin, Heidelberg.

McClelland, J. S. (2005). *A history of western political thought*. Routledge.

McKnight, J., & Kretzmann, J. (1993). Building communities from the inside out. *A path toward finding and mobilizing a community's assets*.

Menconi, M. E., Grohmann, D., & Mancinelli, C. (2017). European farmers and participatory rural appraisal: A systematic literature review on experiences to optimize rural development. *Land Use Policy*, *60*, 1-11.

Méndez, V. E., Caswell, M., Gliessman, S. R., & Cohen, R. (2017). Integrating agroecology and participatory action research (PAR): lessons from Central America. *Sustainability*, *9*(5), 705.

Mengolini, A., & Masera, M. (2021). EU Energy Policy: A Socio-Energy Perspective for an Inclusive Energy Transition. In *Shaping an Inclusive Energy Transition* (pp. 141-161). Springer, Cham.

Metabolic. (2020). *Venserpolder Circulair* [Ebook]. Retrieved 3 March 2022

Milieu Centraal. (2022). *Warmtebeelden: warmtefoto van jouw huis.* Retrieved 12 May 2022, from https://www.milieucentraal.nl/energie-besparen/isoleren-en-besparen/warmtebeelden/

Movisie (2022). *Over Movisie.* Retrieved 20 June 2022, from https://www.movisie.nl/over-movisie

Mulder, P., Dalla Longa, F., & Straver, K. (2021). De feiten over energiearmoede in Nederland Inzicht op nationaal en lokaal niveau.

Nawaz, M. (2021). *Local Inclusive Future Energy (LIFE) City Platform* [Ebook]. Retrieved 4 February 2022, from https://openresearch.amsterdam/nl/page/72403/achtergrondinformatie-life-city-platform.

Nawaz, M., Veldman, E., & Nienhuis, A. (2021). Visie Amsterdam Zuidoost Energieneutraal 2040 [Ebook]. Retrieved 4 February 2022, from https://openresearch.amsterdam/nl/page/72690/visie-amsterdam-zuidoost-energieneutraal-2040---editie2021. -

Odekerken, M., Brock, A., Haydary, M., & Bellaart, H. (2020). *NAAR EEN INCLUSIEVE ENERGIETRANSITIE* [Ebook]. Kennisplatform Integratie & Samenleving. Retrieved 8 March 2022, from https://www.kis.nl/publicatie/naar-een-inclusieve-energietransitie.

O'Donoghue, T., & Punch, K. (2003). Qualitative Educational Research in Action: Doing and Reflecting. Falmer Press.

Omlo, J. (2017). *WAT WERKT BIJ Outreachend werken Kansen en dilemma's voor sociale wijkteams* [Ebook]. Ministerie van Volksgezondheid & Sport. Retrieved from https://www.movisie.nl/sites/movisie.nl/files/publication-attachment/Dossier-wat-werkt-bij-outreachend-werken%20%5BMOV-12693403-1.0%5D.pdf

Phoenix, A. (1998). Dealing with difference: the recursive and the new. *Ethnic and Racial Studies*, *21*(5), 859-880.

Raphael, C., Bachen, C., Lynn, K. M., Baldwin-Philippi, J., & McKee, K. A. (2010). Games for civic learning: A conceptual framework and agenda for research and design. *Games and culture*, *5*(2), 199-235.

Raworth, K. (2017). *Doughnut economics: seven ways to think like a 21st-century economist*. Chelsea Green Publishing.

Raworth, K., & Stikker, M. (2022). *Redesigning Ownership with Kate Raworth and Marleen Stikker*. Presentation, Pakhuis de Zwijger.

Rodríguez-Pose, A. (2018). The revenge of the places that don't matter (and what to do about it). *Cambridge journal of regions, economy and society*, *11*(1), 189-209.

Rosa, H. (2013). Social acceleration. In *Social Acceleration*. Columbia University Press.

Rotmans, J., Loorbach, D., & Kemp, R. (2016). Complexity and transition management. In *Complexity and planning* (pp. 195-216). Routledge.

Rovers, E. (2022). *Nu is het aan ons*. Amsterdam: De Correspondent.

Rowe, G., & Frewer, L. J. (2000). Public participation methods: a framework for evaluation. Science, technology, & human values, 25(1), 3-29.

Sen, A. (2000). Social exclusion. Manila: Asian Development Bank.

Sena, N., & Meesterberends, M. (2018). AMS way of working Principles for citizen engagement [Ebook] (1st ed.).

Servicepunt Duurzame Energie. (2022). Serious Game Warmtetransitie. Retrieved 20 May 2022, from https://servicepuntduurzameenergie.nl/onze-diensten/serious-game-warmtetransitie/

Skjølsvold, T. M., & Coenen, L. (2021). Are rapid and inclusive energy and climate transitions oxymorons? Towards principles of responsible acceleration. *Energy Research & Social Science*, *79*, 102164.

Smid, I. (2021). PRAKTISCHE HANDVATTEN VOOR PARTICIPATIEF ACTIEONDERZOEK. *Journal of Social Intervention: Theory and Practice*, *30*(6).

Sovacool, B. K., & Brossmann, B. (2013). Fantastic futures and three American energy transitions. *Science as Culture*, *22*(2), 204-212.

Spolsky, B. (2004). *Language policy*. Cambridge university press.

Steen, K., & Van Bueren, E. (2017). Urban Living Labs: A living lab way of working

Steg, L., Shwom, R., & Dietz, T. (2018). What drives energy consumers?: Engaging people in a sustainable energy transition. IEEE Power and Energy Magazine, 16(1), 20-28.

Stichting SES (2022). Retrieved 4 May 2022, from https://www.stichtingses.com/over-ons

Stijkel, A. (2022). *"Amsterdam Circular City => Doughnut City? YES, we DO!"*. Presentation.

Tacchi, J., Slater, D., & Hearn, G. (2003). Ethnographic action research.

TNO (2020). White paper: Energy poverty and the energy transition. ENGAGER COST Action.

TNO. *Hoe voorkomen we energiearmoede? | TNO*. TNO. Retrieved 22 February 2022, from https://www.tno.nl/nl/aandachtsgebieden/energietransitie/roadmaps/systeemtransitie/de-sociale-aspecten-van-de-energietransitie/energiearmoede/.

Toronto and Region Conservation Authority. (2020). Transforming the San Romanoway Towers. Retrieved from https://trcaca.s3.ca-central-1.amazonaws.com/app/uploads/2020/12/22150004/3327-SNAP-SRW-FindingsReport_FA_WEB.pdf

Toronto and Region Conservation Authority. (2021). *Effective Neighbourhood and Business Zone Models for Low Carbon Mobilization* [Ebook].

UN (2010). Analysing and measuring social inclusion in a global context. United Nations Publications

UN (2016). Leaving no one behind: the imperative of inclusive development (pp. 17-32). United Nations publication.

UN (2022). *Goal 7 | Department of Economic and Social Affairs*. Sdgs.un.org. Retrieved 4 February 2022, from https://sdgs.un.org/goals/goal7.

Uyterlinde, M. Hal. A. van, Kunst, A., Coen, M. & Bouwman, R. (2019). *Betere wijken dankzij de energietransitie*. Retrieved from https://www.platform31.nl/publicaties/betere-wijken-dankzij-de-energietransitie

Uyterlinde, M., Can, E., Ooms, M., Engbersen, R., & Van Arum, S. (2021). Hoe maak ik een buurtagenda? Zeven bouwstenen voor een vliegende start. Den Haag/ Utrecht: Platform31/Movisie.

Uyterlinde, M., Kunst, A., & van Hal, A. (2021). Inspiratieboek: Opgaven Verbinden in de Wijk. Retrieved from https://www.platform31.nl/publicaties/opgaven-verbinden-in-de-wijk

Uyterlinde, M., van Hal, A., Coen, M., & Can, E. (2022). Samen naar een duurzame en leefbare wijk. Retrieved from https://www.platform31.nl/publicaties/samen-naar-een-duurzame-en-leefbare-wijk

Van de Kerkhof, M., Groot, A., Borgstein, M., & Bos-Gorter, L. (2010). Moving beyond the numbers: a participatory evaluation of sustainability in Dutch agriculture. *Agriculture and Human Values*, *27*(3), 307-319.

Van den Brink, R., & Faaij, A. (2019). Energie wordt goedkoper: innovatie maakt energietransitie rendabel.

Van der Lans, J. (2014). Een wijkgerichte aanpak: Het fundament. Den Haag: Ministerie van Binnenlandse Zaken en Koninkrijksrelaties

van Hal, A. (2022). *Urban Insight College | Transitie naar aardgasvrije wijken – de drie succesfactoren*. Presentation, https://www.youtube.com/watch?v=pfKbyKCqrbM.

van Hal, A., & Götz, N. (2022). Verduurzamen mét bewoners Samenwerken aan de energietransitie in kwetsbare wijken. Retrieved from https://www.platform31.nl/publicaties/verduurzamen-met-bewoners#:~:text=Experimentenprogramma%20Verduurzaming%20van%20Kwetsbare%20Wijken&text=Het%20doel%20van%20het%20programma,programma%20liep%20tot%20eind%202021.

van Houten, D. (2008). Werken aan inclusie. *Journal of Social Intervention: Theory and Practice*, *17*(3).

van Kesteren, D. (2021). Misschien moet er een wet komen op professionele ongehoor-zaamheid [Blog]. Retrieved 9 December 2021, from https://sprankmagazine.nl/misschien-moet-er-een-wet-komen-op-professionele-ongehoorzaamheid/?cn-reloaded=1.

Venzo. (2016). Retrieved 4 May 2022, from https://venzo.co.nl/nieuws/vib-gilma-laurence/

Vergeer, R., Rooijers, F. J., & Davidson, M. D. (2017). *Rechtvaardigheid en inkomenseffecten van het klimaatbeleid: de impact van het klimaatbeleid op de inkomensongelijkheid*. CE Delft.

Vinsel, L., & Russell, A. L. (2020). *The innovation delusion: How our obsession with the new has disrupted the work that matters most*. Currency.

Vringer, K., M. Boomsma & D. van Soest (2021), Energieverbruiksmanagers in Nederland. Energie besparen met de slimme meter, Den Haag: PBL

Weijnen, M. P., Lukszo, Z., & Farahani, S. (2021). *Shaping an Inclusive Energy Transition* (p. 258). Springer Nature.

Wohlin, C. (2014). Guidelines for snowballing in systematic literature studies and a replication in software engineering. In *Proceedings of the 18th international conference on evaluation and assessment in software engineering* (pp. 1-10).

Annex 1: Overview field visits

#	Date & Time	Activity	Site	Researchers
1	17-11-2021 13:30-16:30	Field visit to Venserpolder	Venserpolder	2
2	23-11-2021 14:00-17:00	Field visit to Venserpolder and ArenApoort	Venserpolder and ArenApoort	1, 2, 3
3	15-12-2021 12:00-15:00	Visit Community Centers Venserpolder	Venserpolder	1, 2, 3
4	24-01-2022 14:45-16:00	Conversation at Stichting SES about volunteer work	Stichting SES	1, 2
5	28-02-2022 13:00-16:00	Open helping day at Bloei&Groei	Bloei&Groei	1, 2, 4
6	02-02-2022 16:00-18:00	Volunteering at Stichting SES	Stichting SES	1, 2
7	5-3-2022 13:00-16:00	Helping at Bloei&Groei	Bloei&Groei	4
8	15-3-2022 14:30-17:00	Brainstorm Energy	Groene Hub	1, 2, 4
9	16-03-2022	Visit Bloei&Groei	Bloei&Groei	1
10	17-03-2022 10:30-11:00	Field Visit	Spinnewiel	1, 2
11	22-03-2022 11:00-12:30	Campaign Meeting	Groene Hub	4
12	23-03-2022 13:30-16:00	Flyering	Reigersbos Market	4
13	05-04-2022	Minitraining flyering	Groene hub	1, 2, 4
14	13-04-2022	Flyering Groene Hub	Groene Hub	1, 2
15	26-04-2022	Flyering Groene Hub	Groene Hub, Maldenhof	2, 4
16	17-05-2022	Flyering Groene Hub	Reigersbos Market & Maldenhof	1, 4
17	17-05-2022	Information night infrared panels	Groene Hub	1, 4
18	21-6-2022	Biodigester opening + conference	Groene Hub	1, 2, 4

Annex 2 : Ethnographic Fieldnotes

For every activity conducted, please fill in the following template. The template can be adapted accordingly depending on the setup of the activity.

Date:
Time:
Site:

Method used:
Tools used:

Team-members:
Participants:

Key insights and takeaways:
- Insight 1
- Insight 2

General description of activities:
- Comment 1
- Comment 2

Description and observations about the participants:
- Participant 1
- Participant 2

Reflection on methods and tools used:
- Tool 1
- Tool 2

Follow-up questions and next steps:
- Idea 1
- Idea 2

Analytical reflection:
- Idea 1
- Idea 2