

# Meaningful participation, Working towards solar energy justice

*A case study analysis on different participation strategies applied in the land-based solar energy sector through an energy justice approach*



## Master thesis research

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## Summary

This study discusses how land-based solar park developers participation strategies relate to the concept of **meaningful participation**. The research does so by mapping out different strategies of developers through a case study approach and analysing these by applying an energy justice framework (EJF). The potential of participation in planning project outcomes is well studied in the Dutch context. This study, however, applies the novel approach of combining the tenets of energy justice to review participation from a solar park developer perspective. The categorisation of Arnstein's ladder of participation is used to structure the different modes of participation that are applied in four cases of solar park developments. Through a cross-case analysis of these four cases, this research provides an answer to the following research question:

*“What different participation approaches do land-based solar park developers apply and how can the idea of energy justice contribute to meaningful participation in order to realise fair and just development of ground-based solar park developments?”*

This study focusses on medium to large scale land-based solar park projects up until permit application. Solar parks are land-based photovoltaic (PV) solar panels that occupy a certain ground surface area (either small or large scale) in urban or rural areas. The solar park may supply power at the utility level or to a local user or users.

This research yields two important main conclusions:

The first outcome shows that developers adapt their participation strategies depending on the concerns and needs of stakeholders. A meaningful participation strategy is able to shift towards the needs of the citizens. In this sense, adjusting the different modes of participation depending on the needs and feedback of the different stakeholders involved in a development.

The second, relates to the relevance of participation during the development of municipal policy on solar parks. Meaningful participation requires stakeholders to be able to participate during the whole process. This is relevant to both policy development as well as project development. Meaningful participation does not limit itself to a specific project. The relevance of beforehand established policy with regard to solar parks is evident in all cases studied. The findings state that stakeholders should be more closely and accurately involved in the policy development process beforehand.

The research suggests that the EJF is an adequate framework for analysing participation approaches in terms of justice and fair decision making. However, the EJF also highlights the complexity of project development with regard to topics that are politicized.

Keywords: energy justice, participation, land-based solar park, renewable energy, energy transition, case study



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## List of abbreviations

The following contains a list of abbreviations and Dutch terms and their English translation which was adopted for this research:

DE Berg en Dal:	Duurzame Energie Berg en Dal
ECL:	Energie Coöperatie Leur
EJF:	Energy justice framework
GHG:	Greenhouse gas
Ha :	Hectares
LBH Hernen and Leur:	Leefbaarheidsgroep Hernen en Leur
LEC:	Local energy cooperative
PC:	Personal communication
PE:	Pure Energie
PV:	Photovoltaic
RE:	Renewable Energy
RES:	Regional Energy Strategy
SP:	Spatial planning
SPD:	Solar park development
TWh:	Terawatt hours

# 1. Introduction

## 1.1 The rise of solar power

As a result of the Paris climate agreement in 2015, the energy sector has been shaken and stirred. In this agreement, 195 countries including The Netherlands committed to limit the global average temperature rise below the 2 degree mark by the year 2050. In the Dutch context the adoption of this agreement is to a large extent done by the Climate agreement. In order to reach the climate target of sub 2 degrees, the amount of greenhouse gas (GHG) emission has to be reduced by 90% in the year 2050. In specific, the CO<sub>2</sub> emissions feature a large factor in reaching the targets of GHG reduction.

In the Climate agreement, the Dutch agreed to realise the ambition of reaching 49% emissions in 2030 compared to the level of 1990 (Klimaatakkoord, 2019). Reaching the target in 2030 will require large scale reductions in several critical sectors ranging from electricity, industry, built environment, mobility to agricultural land use. Following the Climate agreement, the reductions planned for 2030 in the electricity sector will be the most substantial. To reach this target several agreements were made within the Climate agreement. The increase in demand for solar and wind energy production and consumption does not come as a surprise. A large part of this production and consumption is planned to be realised offshore. The remainder, however, is due to be developed on land. Land, however, is often privately owned or controlled by public authorities such as Staatsbosbeheer, Rijkswaterstaat, provincial bodies and municipalities. The national government has chosen to give the responsibility and authority of developing the required Terawatt hours (TWh) to 30 regional bodies that are each developing Regional Energy Strategies (RES).

In line with these developments, we can see an ongoing large increase in the development of renewable energy production. Up until 2018, 65 land-based solar parks had been developed with many more projects waiting in the pipeline for approval. Experience has shown us that these spatial (energy)projects are to a large extent depending on community support (TNO, 2019). In specific, solar farms put large claims on relatively scarce space in rural areas, as a result, land-based solar farms can either stand or fall by the will of the community (TNO, 2019). A panel from 2017 indicated that a quarter of the Dutch citizens are against the realisation of large-scale renewable energy production in their vicinity (Rijnveld & Van Schie, 2019). Due to the large role that community support plays in the realisation of renewable energy projects, the progress in this sector is slower than favourable (Rijnveld & Van Schie, 2019). While this panel dates from 2017, it provides the critical setting that renewable energy projects face and in direct relation to this, reaching the climate agreements of Paris and the Green Deal.

The current assumption amongst policy officers and developers is that community resistance decreases when parties are able to participate in a correct manner during the project development of a RE project (Rijnveld & Van Schie, 2019). With the concept of participation further being grounded in the upcoming Environmental law that is due to be implemented in 2022, it is important to consider the aspects that relate to meaningful participation.



Participation is likely to remain an important concept within Dutch spatial planning. The role of the government has shifted from initiator to a more approving and testing role. The current legal frameworks provide room for initiators and government to shape the participation process. According to Rijnland & Van Schie (2019) practise shows that, in the visioning phase until the permit grant, the opinions of citizens are hardly considered and there is no sign that this is going to improve. Concerns then arise on how municipal bodies are currently perceiving participation and its relevance with regard to renewable energy and the energy transition as a whole.

Local resistance is often depicted as Not In My Back Yard (NIMBY), which suggest acceptance of RE in the public, but not on the local level (Hanger et al., 2016). More recent literature suggests that a lack of acceptance from communities is linked to issues of fairness and equity (Mundaca et al., 2018). Mundaca et al. (2018) suggest that perceived fairness of procedures is a critical precondition in order to also reach perceived legitimacy of the planning project. The concept of justice in the energy transition world is one that is relatively novel however, it seems to play a relevant role in the obstacles that slow down the energy transition when it comes to renewables. In specific, it discusses the fairness of procedure and distribution of outcomes (Mundaca et al., 2018). As mentioned before, the underlying assumption is that participation processes, if done correctly, will lead to increased local acceptance. It remains, however, unclear what a proper participation process is currently. Municipalities are free to interpret this notion of participation in the way that they seem fit. The current situation, as a result, is that expectations from project initiators differ between municipalities. Participation is not a new concept within the field of planning with works such as Arnstein's categorisation of participation as early as 1969, which is still relevant today. (Arnstein, 1969). Participation is generally understood to have a positive influence on planning processes and outcomes, or as Arnstein described it: *"The idea of citizen participation is a little like eating spinach: no one is against it in principle because it is good for you"* (Arnstein, 1969). One of the main criticisms expressed by stakeholders is that they experience participation as an empty ritual with no significant outcomes in the process (Arnstein, 1969).

This research aims to address the concern of what makes participation meaningful by combining the categorisations of Arnstein with the new concept of energy justice. In addition, this study analyses participation through an energy justice approach. The concept of participation is well-studied and its potential to contribute to the acceptance of planning project has already been identified (Langer et al., 2017., Henger et al, 2016) More recently, the concept of energy justice has been a relevant topic of research, which has shown similar effects on the outcomes and procedure of planning projects (MCcauley et al, 2019., Mundaca et al, 2018., Kluskens, 2019). This study combines both the concepts of participation and energy justice and suggests that following a participation strategy through the tenets of energy justice results in **meaningful participation**.

This study introduces the application of the energy justice framework as an analytical tool to review participation approaches with a specific focus on land-based solar parks from a developers' perspective. Suggesting that structuring participation approaches following the tenets of energy justice allows for reaching meaningful participation which addresses the main concerns of participation as a deceptive form of dominance in which institutions make people believe they are making decisions (Arboleda, 2015). Participation is mostly studied

from a community perspective, being referred to with different terms such as Community Participation, Citizen participation and local energy initiatives (Hager, Hamagami, 2020; Lucas et al, 2021; Soeiro & Dias, 2020). However, participation strategies that are instructed from a top-down policy guideline, are designed by the actors that carry them out, the decision makers. These participation approaches are often not based on community beliefs, but rather based on policy guidelines and developer's experiences. Therefore this study, in order to better understand the different considerations with regard to the planning of solar parks developments in the Dutch context, focusses on the developers perspective.

## 1.2 Objectives and research question

This study aims to better understand the relation between participation strategies and outcomes to work towards a better understanding of meaningful participation with regard to land-based solar park developments. This research aims to do so by mapping out different strategies that developers use to involve stakeholders and how they are being implemented at the local level. In doing so, taking a developers perspective to review the participation strategies. After which, they are compared through an energy justice framework. This is done in order to provide recommendations on both the strategic level as well as the policy level with regard to participation in planning processes of land-based SPD.

In specific, this study will consider medium to large scale land-based solar park projects. Solar parks are land-based photovoltaic (PV) solar panels that occupy a certain ground surface area (either small or large scale) in urban or rural areas. The solar park may supply power at the utility level or to a local user or users. Roof-based solar panels are not included in this study.

In line with the research objective and the scope taken in the research, the central question has been formulated as the following:

*“What different participation approaches do land-based solar park developers apply and how can the idea of energy justice contribute to meaningful participation in order to realise fair and just development of ground-based solar park developments?”*

The following sub questions are formulated in order to answer the main question:

- 1) What are the main elements of participation strategies of solar park developers for the selected cases?
- 2) What are the main concerns for stakeholders during the participatory processes?
- 3) What are success factors linked to participation during these developments?
- 4) How can energy justice adjust participation strategies to better address these concerns?

### 1.3 Relevance

#### *Societal relevance*

While the main objective of this research is to provide a better understanding of participation strategies that RE developers apply in the solar sector, the relevance extends beyond the outcome of that question.

As mentioned in the introductory chapter, the current policy setting for developing solar parks is largely decentralised to the municipal level. This has resulted in incoherent policies amongst the decentralised governmental bodies. It can be expected that insights generated in this research will provide recommendations for the development of new policies with regard to better policy frameworks for participation processes for land-based solar parks.

The concept of energy justice is considered an applicable tool to better integrate usually distinct distributive and procedural justice concerns (Sowacool & Dworkin, 2015). By applying energy justice to SPDs in the Netherlands this study aims to provide critical reflections to both developers and communities on their role in the expansion of renewables. Expanding the concept and ideas of energy justice in the sector will hopefully lead to more just and in this sense more accepted and perhaps embraced projects. Thus providing opportunities to create a more streamlined process of permit application to permit grant.

#### *Scientific relevance*

With regard to participation there is a large existing body of knowledge. Arnstein's well-known categorisation from 1969, which is still relevant today, can be considered a première of a research topic, which from the 60's onwards began to stand out in the scientific debate and planning practises (Davidoff, 2001., Friedmann 1987, Moatasim, 2005). In many countries there is a growing movement in political science and public administration for methods of governance that allows for the cooperation between citizens and policy makers to address democratic deficits and citizenship (Ebdon and Franklin 2006; Hong 2015). Following the expanse of literature and studies on participation several new concept were introduced such as participatory planning and collaborative governance (Donahue, 2004). These approaches to participation are combined with the idea that embodying participation in planning leads to a more general idea of acceptance towards the planning project.

However, this study suggests that by applying energy justice as the main element to structure participation strategies with can lead to not only *perceived justice*, but also actual fairness in both process and outcomes. Not only giving citizens the sense that they have participated in a meaningful sense, but also ensuring that the participation strategy in itself is meaningful. Participation is sometimes considered a meaningless process. A process in order to tick of a box required as a result of policy. The relation between the tenets of energy justice, namely procedural and distributive justice, with regard to the factors that make up the different approaches to participation is understudied (Kluskens, Vasseur & Benning, 2019). Following this line of thought, there are some limitations to the separate concept of participation and energy justice that this study aims to address:

First of all, This study introduces the novel approach of structuring participation through the tenets of energy justice as a concept to reach meaningful participation. Suggesting energy justice can be used as a way to structure participation strategies, but also review them and provide insights in the missing modes than can strengthen strategies. In this sense, following

the argumentation by Lacy-Barnacle & Bird (2018), who state that applying the tenets of energy justice is not limited to an international perspective but can also analyse local issues.

This study introduces an approach in which the modes of participation, as they are categorised by Arnstein (1969), are combined with the energy justice framework in order to work towards meaningful participation. In doing so, addressing the concerns regarding participation as an empty policy process to a process in which participants' viewpoints are acted upon (De Gramont, 2013). Moving away from the idea that participation is just a deceptive form of dominance in which institutions make people believe they are making decisions (Arboleda, 2015). Structuring participation approaches through energy justice, which aims at fair and just procedure and outcomes, is considered an approach which can address these concerns of participation. This study aims to contribute to understanding the relation between energy justice and current participation approaches of developers for land-based SPDs. In doing so, discussing how an energy justice approach to participation can contribute to make participation meaningful.

Secondly this study, as it aims to review different participation strategies, takes up a developers' perspective on the concept of participation. Approaching the concept of participation within different cases through the project design of developers. In doing so, emphasizing on the decision making role that developers have when they initiate a project and the role they play in choosing and applying specific participation modes. This specific focus on the developers' perspective appears to be a novel approach in the literature. Of the specific developers' perspective this study also concerns the relevance of other actors during the development process, acknowledging also the municipal decision making role and partnership projects with local energy cooperatives. Contributing to the body of knowledge on local energy cooperatives and

Participation as a concept, as has been mentioned in the prior paragraph, is well-studied. Participation in relation to land-based solar parks in the Dutch setting through a case study approach, much less so. Research institute TNO (2019) shows the current body of literature available on solar park case studies is rather limited. In contrast to the much further developed experience in wind energy there are still steps to be taken with regard to solar energy. Differences still exist between solar energy programs and specific land-based projects.

This research contributes to the body of knowledge with regards to case studies on land-based solar parks through a qualitative approach. Providing an in-depth insight into four land-based developments, their respective local political framing and the stakeholder interactions. Focussing on the cases through a developers' perspective to review the modes of participation. The analysis considers the different relevant actors and how and through what means they were involved in the development.

## 1.4 Reading guide

The next chapter, chapter two, provides an overview of the concepts of participation and energy justice. After which the chapter closes off with the analytical framework which was applied during this research. Chapter three then discusses the research design. Chapter four provides an extensive review of the four cases that were studied for this research. Insights and findings from these cases are discussed in chapter five by means of a cross case analysis. In conclusion chapter six provides an answer to the main research question of this research and discusses recommendations that came forth from the findings. Chapter seven then shortly discusses and reflects on the research design and the limitations that played a role in this research. Chapter seven closes off with recommendations for future research.

## 2. Theoretical framework

In order to apply the energy justice approach in reviewing the practical setting it is necessary to better understand the dimensions that relate to energy justice. The first section of this chapter discusses the concept of energy justice and the three tenets that are its foundation. The second section discusses the concept of participation and the relation between energy justice and meaningful participation with regard to RE projects. The third section introduces a conceptual model coming forth from the theoretical discussion and its appliance in this research.

### 2.1 The perception of justice and fairness in the energy domain

This chapter discusses the idea of energy justice and the framework with which processes can be analysed. The chapter initially gives a background of the concept that is energy justice and the three tenets that form it. The second part shortly explains how the framework can be applied as an analytical tool for fair decision making.

#### 2.1.1 Energy justice framework

Energy justice research seeks to identify the ways in which benefits and ills related to energy issues are distributed, remediated and victims are recognised (Velasco-Herrejon & Bauwens, 2020). The ideas behind energy in relation to justice is not something of the 21<sup>st</sup> century. The global dependence on energy is a fact. While energy choices are to a large extent technical, there is a much larger social institution or debate underlying any form of energy production and usage. The way in which a society produces and consumes energy is closely related to the systems of social, economic and perhaps especially political interaction. Both on the local communal scale as well as the global scale. The definition of energy justice as part of a global structure might then perhaps be best described by Sovacool & Dworkin (2015) as 'a Global energy system that fairly disseminates both the benefits and costs of energy services, and one that has representative and impartial energy decision-making' (Sovacool & Dworkin, 2015). Energy is a key resource in what has become 'successful' and modern societies, world economy and daily life routines of everybody. Humanity as a whole is currently standing at the brink of an energy transition that has been unfolding for many years. Research shows us that fossil fuels are limited and likely to start running out in the next few decades. Societies will then face difficult choices, such as what kinds of energy systems should they transition to, how to distribute the benefits that come with them but also and perhaps more importantly the risks and costs (Miller, 2012).

This idea of a just energy transition is also relevant for the Dutch socio economical setting. In the following decades society has the ambition to develop into an energy neutral society which means that the current energy systems are going to be completely replaced by net zero CO<sub>2</sub> based production. With the current prospects, this will have large impacts on our physical environment due to necessary land-use that comes with certain techniques such as solar energy. Energy policy increasingly requires a nuanced understanding of social justice concerns within energy systems, from production to consumption (McCauley et al., 2013). The energy transition is not just a spatial issue but has many social and procedural consequences that directly relate to its implications from RE solutions.

An important task of the government is to serve the common good of the public and to do so in a fair and acceptable manner. This task is best fulfilled if a public body does not only follow the law but also binds its decisions on the needs of the people and reaches acceptance. Research shows the elements behind this idea of justice in the energy sector can be broken down in threefold (McCauley et al., 2013). These three tenets are by many considered the core of energy justice, coming forth from justice literature regarding energy policy (McCauley et al., 2013), namely:

- I. Procedural Justice
- II. Distributional Justice
- III. Recognition Justice .

These tenets of energy justice are interlinked and feature many overlapping issues. The following paragraphs aim to provide an overview of the three tenets.

#### *Procedural justice*

Mundaca et al. (2018) state that procedural justice consists of three relevant aspects that are relevant for planning projects, namely: decision making, the consultation process and information sharing.

Fair decision making is a core aspect of establishing legitimacy when it comes to rules and outcomes. It has a very strong relation with the outcomes of a planning project. Literature states that fair procedures with stakeholders encourages cooperation (Mundaca et al., 2018). The 'just' way of stakeholder involvement is important to reaching community acceptance (Mundaca et al., 2018). Several aspects can be distinguished with proper stakeholder involvement. Proper stakeholder representation and the possibility for stakeholders to be heard are directly related to a consultation process and the sharing of information. The information process before a project is started has large implications on procedural justice. But also during project development and realisation, the transparency towards affected stakeholders, the ability to be heard and access to consultation have large implications on the fairness of outcomes of planning projects.

Transparent information sharing is also mentioned as a critical aspect of just procedure. McCauley et al. (2013) show how partial information sharing could influence decision making to suboptimal decision. It also shows the positive aspects of information sharing between stakeholders. Impartial information could, even with good intentions, lead to unfair decision making.

#### *Distributive justice*

Within the so-called triumvirate of tenets of energy justice distributive justice can be considered as the substantive aspect of justice. It considers the allocations of materialistic aspects related to the costs and benefits of the energy justice frame (Velasco-Herrejon & Bauwens, 2020). It refers, amongst other aspects, to the division of the impact on landscape, allocation of RE production and consumption and the (in)justice of the environmental benefits and burdens that come with it, in other words the outcomes. RE is inherently believed to be beneficial as an environmental outcome in general, but these projects also have a very local effect such as changes in land-use, water usage and wildlife and diversity

(Miller, 2012). Land use specifically, is often depicted on the foreground as the land requirements for utility-scale RE is substantial and has obvious impacts on the physical environment (Hanger et al., 2016). The concept of energy justice can inherently be considered a spatial concept. This includes both physically unequal allocations of environmental benefits and ills and the uneven distribution of the responsibilities that come with them (McCauley et al., 2013).

Energy justice can be distinguished in cases where questions about the desirability of certain technologies in principle become entangled with issues that relate specifically to localities. Furthermore, energy justice represents a call for the distribution of benefits and ills on all members of society regardless of income, race, etc (McCauley et al., 2013). Distributive justice in this sense is very much concerned with the outcomes of decision making. Notably their distribution, the allocation of responsibilities, and potential risks (Mundaca et al., 2018).

### *Recognition justice*

The third tenet of energy justice is recognition justice. McCauley et al. (2013) consider recognition justice as more than tolerance, and states that individuals must be fairly represented, that they must be free from physical threats and that they must be offered complete and equal political rights. As noted before, these tenets are not to be considered separate and are strongly interlinked. The exclusion of a certain group of individuals can be seen as an immediate implication towards not only recognition, but also procedural justice. It could lead to a distortion of people's views that may appear demeaning. While minority perspectives might appear less relevant during the initial stage of a planning procedure. A lack of recognition can therefore occur as various forms of cultural and political domination (McCauley et al., 2013).

### 2.1.2 A practical approach to the energy justice framework

Sovacool and Dworkin (2015) suggest that the recurring theme is that the concept of justice may be less important for what it is, than for what it 'does'. Sovacool and Dworkin (2015) argue that it can be considered a tool with multiple functions such as linking individuals' wishes to values of a larger body and coercive pressure of society as a whole. It can address and resolve disputes in ways that extend beyond individual preferences, in this sense leaving rejected opinions less bitter. It provides a framework to make 'the better' choice even when there are no disputes by referring to the just outcome from our decisions and it promotes mental health and psychological well-being since being dealt "justly" enables us to feel healthy, virtuous, sane and "right" (Sovacool & Dworkin, 2015).

The EJF is not only a conceptual tool but can be applied as both an analytical framework as well as a decision making tool (Sovacool & Dworkin, 2015; Dolter & Boucher, 2015). The EJF provides an insight in a more human centred perspective on energy systems. This research requires a practical approach to the concept of participation in relation to community acceptance in RE systems. Mundaca et al. (2018) provides a framework where distributive justice focuses on the outcomes of a project and procedural justice on decision making, consultation processes and information flow (figure 3.). This framework is adopted to analyse the various participation approaches that project developers apply during SPDs. Various aspects such as transparency, fair distribution of profits, burdens and good



communication all relate to the quality of a participation approach and therefore also have an expected relation on the fairness of outcomes.

### *Limitations of EJF*

While the EJF can be applied as both an analytical framework as well as a decision making tool (Sovacool & Dworkin, 2015; Dolter & Boucher, 2015) it features some limitations. One primary critique is the lack of clarity about what is to be defined as justice or injustice when discussing ethical issues. Without providing an account of what makes a situation unjust it proves difficult what aspects of a situation need adjustment (Velasco-Herrejon & Bauwens, 2020). Another critique which builds further on the prior is that whose definition of justice is being followed. Communities may have different considerations and expectations of the just decision. While the framework might suggest a top-down approach to energy justice this might not necessarily strike true to activist-led and or community driven movements (Velasco-Herrejon & Bauwens, 2020).

## 2.2 Applying energy justice to structure meaningful participation

This chapter reviews the concept of meaningful participation in planning processes. Discussing that the tenets of energy justice relate to the modes of participation and can be applied in order to work towards meaningful participation.

Firstly, this chapter discusses in paragraph 2.2.1 how procedural justice can be considered as meaningful participation. This paragraph also presents a categorisation of the concept of participation following Arnstein's (1969) ladder of participation. The second paragraph, 2.2.2, discusses the different stages of a solar park development and how participation can come into practise during these different phases.

### 2.2.1. Procedural justice as meaningful participation

Procedural justice refers to the different elements during the process of decision making that lead to the development of RE projects. Justice in this sense is considered the greatest possible outcome of the distributional process of the benefits. It does not limit to reaching justice as final outcome, but also entails a just process to reach this outcome (Frankena, 2003). The different institutions shape the outcomes of this process and non-inclusion of relevant decision makers leads to bias in the outcomes when affected stakeholders are left out and relatively powerful groups are in control (Rawls, 1999). In other words, procedural justice can be achieved by following a process of relevant stakeholder participation (Mundaca et al, 2018). When discussing SPDs that means inclusion of citizen involvement during the different stages of the planning process. The degree of participation in RE projects is a determining factor with regard to the level of perceived fairness during the decision making procedure and the outcomes (Langer, Decker & Menrad, 2017). Meaningful participation includes who is included in the decision making and to what degree are they involved. In addition, meaningful participation is dependent on the timing and frequency of the involvement of stakeholders (Langer, Decker & Menrad, 2017).

To summarise, meaningful participation through the tenet of procedural justice is understood as the equal involvement of all relevant stakeholders during the different stages of decision making. Representing and involving the relevant stakeholders in a fair and just way. And lastly. allowing relevant stakeholders to participate at the right moment and adequate time.

Meaningful participation as a concept should be considered as a general term which can be approached in different modes based on influence stakeholders have. The most well-known framing of the concept of participation is the Participation Ladder (Arnstein, 1969). A typology of eight levels of participation that can be subdivided into 3 higher levels. To shortly summarise, the ladder's three parts (Figure 1.) are referred to as:

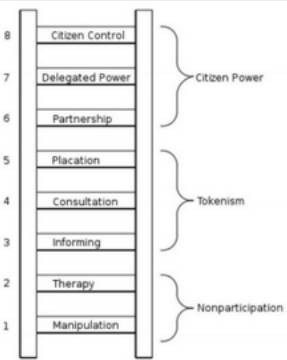
- I. Citizen power
- II. Tokenism
- III. Nonparticipation

As Arnstein well depicted: 'There is a critical difference between going through the empty ritual of participation and having the real power needed to affect the outcome of the process.' (Arnstein, 1969, p.24). Arnstein connects participation to a shift of power in which citizens play an important role in a process of social reformation. It has the potential to provide

citizens the opportunity to be part of concepts earlier discussed in the energy justice framework (paragraph 2.1) such as: information disclosure, policy formation and goals, and how to benefit from these processes.

The first, non-participation, is a state in which there is no resemblance of participation at all during any stage of the development process. This is considered the lowest level of participation. The second is referred to as tokenism, in which the citizens are given a place to be heard and their needs and opinions are expressed. However, this does not necessarily result in any change in the decision making process or that their opinions are taken into account in the planning process and therefore its outcome. This is due to the lack of power granted by the decision makers (Arnstein, 1969). In the highest and third level, citizen power, citizens have the means to actually engage in negotiations with the decision makers. This level of participation is where participation can result in a diminishing role of the bureaucratic way of decision making. It is also this level of participation where the dualistic relation between project initiator and city council can be marginalised or changed by emphasizing on self-governance and giving the community the chance to react to decisions made by the authorities (TNO, 2019). Furthermore, it can enhance the legitimacy of decision making by including a wider spectrum of opinions and values, hereby decreasing the margin of error and contributing to the quality of a decision (TNO, 2019).

Arnstein's (1969) ladder will be applied in order to provide an understanding and categorisation of different participation strategies that are suggested by project initiators (Figure 1.).

		Form of Participation	Definition
	8	Citizen Control	
	7	Delegated Power	
	6	Partnership	
	5	Placation	
	4	Consultation	
	3	Informing	
	2	Therapy	
	1	Manipulation	
		Manipulation	Manipulation is about educating the people about the policy idea and/ or problem. The people being educated have usually no legitimate function or power. The policy plan is being sold.
		Therapy	This form of participation puts emphasis on curing the people participating from their ideas. The goal is to adjust the disagreement showed by the citizens
		Informing	This form is about informing people of 'their rights, responsibilities and options' [20]. The citizens can ask questions, but there is no receptiveness for the opinion of the citizens. It is a one-way flow of, often technical, information from the decision maker to the citizen.
		Consultation	In this form the opinion of citizens is asked, but not necessarily taken into account. Policy options are not available, just consultation on one policy option takes place. The scope of options is already limited by the people in power. There are no mechanisms to assure that their opinions will be taken into account.
		Placation	There is an information flow and the scope of policy options is not limited beforehand. The expectation is that there is some influence of the less powerful. However, the powerholders still decide and can outvote the powerless since they judge the legitimacy of the input.
		Partnership	In this form 'the power is redistributed through negotiation between citizens and powerholders' [20]. There is agreement on structures to 'share planning and decision-making responsibilities' [20]. In this form people can initiate plans, engage in joint planning and review plans.
		Delegated Power	Citizens have dominant power in the decision-making and are accountable for the project. They (citizens) have the power to put things on the agenda, such as new plans, and the powerholder has to negotiate.
		Citizen Control	Citizens have control over the budget, are responsible for the process and the solution. They are in charge of the policy-making and managerial aspects. If final approval is needed from the city council, it cannot be framed as citizen control.

**Figure 1. Arnstein's (1969) ladder of participation and the different forms explained**

### 2.2.2. Distributive justice as the outcome of meaningful participation

Distributive justice can be regarded as the outcomes of the decision making process. In a meaningful and fair participation process energy justice suggests that the costs and benefits of a planning project should reflect an equal distribution among members of society regardless of their position in society (Jenkins et al, 2016). Meaningful participation is thus inherently connected not only to a fair process, but can also be connected to the allocation of technology and the outputs of these technologies (McCauley et al, 2019).

The public opinion within the land-based solar energy business is that policy and procedure are following the same development as wind energy has experienced the last decades. For this study on land-based RE we therefore adopt a categorisation of outcomes originally made for wind energy (Figure 2.). A similar categorisation can be found when cross referencing with the most recent monitoring of the Dutch state of participation in land-based RE projects (Schwencke, 2020).

Mode of Distribution	Definition
Compensation measures	Compensation measures cover the negative consequences for affected individuals of wind energy projects, for example regarding the value of property or houses of affected citizens [11]. Examples exist of developers directly paying compensation for the perceived costs, but also agreements where it is guaranteed that citizens can sell their property at the current market value [11]. However, this form has not been identified as the most effective form of distribution so far, since the line between bribery and compensation is thin and thus faces the risk of creating trust issues which results in doubts regarding the fairness of this mode [11,25].
Community Benefits	Community benefits are in contrast to compensation measures not specified to just a couple of individuals, but create benefits for the whole community and thus compensate in that sense for the local consequences of wind energy projects [11]. Community benefits are based on the equality principle since the aim is to give the people involved an equal share of the benefits [30]. An example is a local reduced electricity tariff for the affected people or the community [10]. Also, annual compensation payments to the community or part of the profit going to local funds can be noticed in the literature as a form of community benefits [10,11].
Ownership	Ownership measures can be seen as the most direct form of financial participation in wind energy projects. There are different forms of citizens' financial participation in which the degree of ownership differs. It ranges from citizens investment by shares to full community ownership of a wind turbine [11]. Ownership measures in the form of shares are based on the equity principle, since the financial benefits are proportional to how big someone's share or investment is [30].

Figure 2. Modes of distribution (Kluskens, Vasseur & Benning, 2019)

#### *The relevance of local ownership with regard to participation*

In the public debate, fair distribution of the outcomes of RE planning projects is believed to increase public support and acceptance (Yeşilgöz-Zegerius, 2021). The Climate agreement underscores the ambition and relevance of ownership of the means of production by the local society. Together with the requirement of conducting participatory approaches during the planning process the aim of 50% local ownership is often expected to be integrated in the various participation strategies. However project initiators thus far have hardly come to realise local ownership in the true sense of the word. Local ownership can be defined as: "A balanced ownership division in a local area in which 50% of the production is in the hands of local ownership (citizens and companies) (Climate Agreement, June 2019, p.p. 164-165).

However, what this refers to is the aim of 50% local ownership. This leaves a lot of ground for flexibility and municipal interpretation to what that should actually mean. Considering that many municipalities thus far have not developed policy regarding large scale renewable solar projects and that RES processes are still in their primary stage, it sets the ground for large discrepancies between different projects. The expectation appears to be that regulations and policy on solar developments will follow the development in the sector that wind energy projects have done so the last decade the current, thus making the policy structure much more solid.

The relevance of local ownership with regard to decision making should be made clear, however, as 50% ownership provides equal decision making rights to the local owners of the shares. In this sense directly impacting the tenet of procedural justice through empowerment of individual citizens organised through, most commonly, a local energy cooperative.

### 2.2.3 The different stages for meaningful participation and outcomes

Participation with regard to solar park developments in the Dutch context can be considered to take place or be organised during either the policy development process, or in the project development process. The policy process is guided by the local governmental body that aims to provide a clear policy programme which complies with ambitions regarding the energy transition. RE makes up a distinct aspect of the energy transition and through the RES programme all municipalities are currently pressured to shape energy policy. It can be so that the municipality organises stakeholder workshops with the local society to provide input on the specific requirements project initiators have to comply with. In addition it could set a baseline for the requirement of landscape design and a fitting spatial plan for a solar park initiative.

The participation dialogue during the policy phase is not considered the primary object in this study, as the project's participation dialogue is. However, the policy regime and the extent to which local governmental bodies aim to interact with the local society to take into account their opinions and thoughts directly impact developers' participation strategies. As guidelines can be a clear indication of how a project initiator is forced by the municipality to structure their participation strategy as well as their project design during project development, which introduces the second part of participation: "Project participation". One significant example of this is the fact that policy dictates where SPD initiatives are allowed, therefore the policy process can be considered just as relevant or perhaps even more relevant than project participation.

Project participation relates to the different modes that can be identified within participation strategies that project developers choose to apply, or are mandatory to comply with in their projects. The participation monitor of 2021 (Schwencke, 2020) considers the following division of phases in which participation is relevant for land-based RE development:

- I. Process Participation in the policy phase (as discussed above)
- II. Project participation
  1. Process Participation
  2. Co-ownership: financial participation with ownership (either collective/individual)
  3. Financial participation without ownership
  4. Local financial fund
  5. Local public arrangement

When it comes to project participation it is important to clarify certain aspects. First of all, depending on what forms of participation are used in a project, there can be a difference in which stage of the project they are applied. Process participation, co-ownership and financial participation are types of participation in which the stakeholders can be engaged throughout all stages of the project ranging from preparation to development, construction and exploitation (Schwencke, 2020). What this shows is that project initiators have a range of approaches to define their participation strategy from but also they can choose where and when during the process to apply these strategies. As these different strategies are often not clearly defined by local authorities the participation strategy can be quite different even though the type of approach is similar

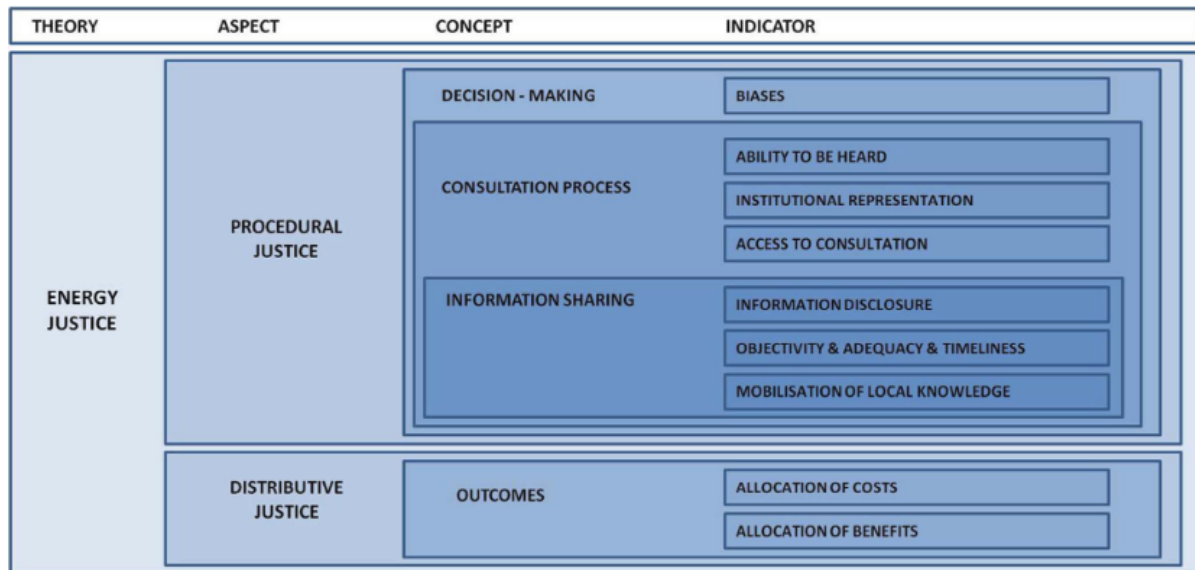
## 2.3 Conceptual model

The underlying assumption of this research is that participation processes which follow a fair and just approach to decision making and distribution of the outcomes can be considered to be meaningful. It remains ,however, unclear what a proper participation process is. Municipalities currently are free to interpret this notion of participation in the way that they seem fit.

As mentioned before the underlying assumption is that participation processes if done correctly will lead to increasing community acceptance. It remains however unclear what a proper participation process is. Municipalities currently are free to interpret this notion of participation in the way that they seem fit. The current situation as a result is that expectations from project initiators differ between municipalities.

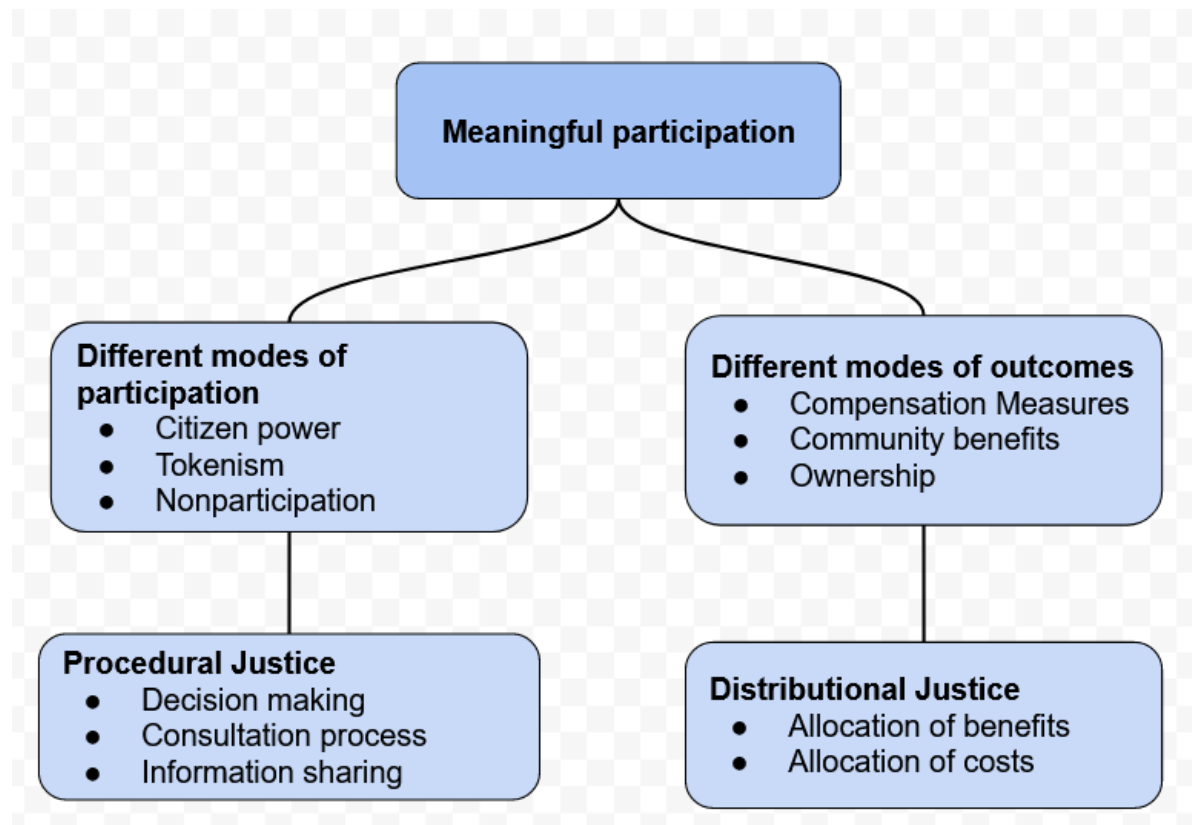
When considering the inter-relations between the various concepts related to energy justice and the way project development is constructed, it becomes clear that these concepts are to some extent intertwined. Following the theoretical section a conceptual model can be constructed which represents the understanding that incorporating an EJF through a participation strategy will contribute towards meaningful participation and more positive outcomes in projects, such as land-based solar parks. By including meaningful participation in the planning process this can lead to more general acceptance.

In order to combine the concept of participation and the different approaches with the ideas of energy justice, this study adopts the analytical interpretation of energy justice by Mundaca et al. (2018) (figure 3.).



*Figure 3. Analytical interpretation of EJJ by Mundaca et al. (2018)*

This analytical model is combined with the categorisations for the different procedures that can be applied in participation approaches as mentioned by Arnstein (§2.2.1., which relates to procedural justice) and preferred modes of outcomes as defined by Kluskens et al (§2.2.2., which relates to distributional justice). In order to form an analytical model that follows the structure of this research and reflects the different aspects that relate to the concept of meaningful participation. It thus reflects the idea that energy justice as exerted through the two nodes of participation, procedure and outcome, leads to meaningful participation and therefore more positive outcomes for land-based SPDs (figure 4.).

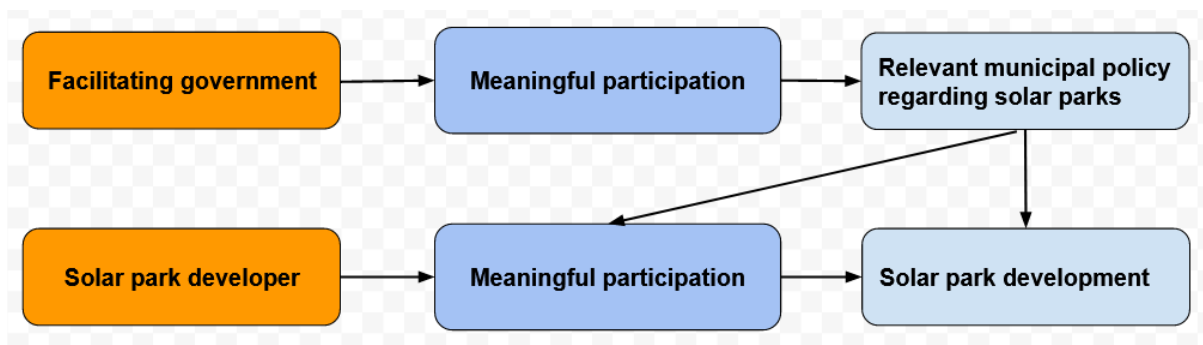


*Figure 4. Framework for meaningful participation through the tenets of energy justice*

Following this analytical model, meaningful participation is framed through an energy justice approach. The tenets of energy justice are aligned with the design of a participation strategy suggesting that fair and just inclusion in decision making and involvement (procedural justice) and the division of outcomes (distributional justice) lead to a meaningful participation strategy. Different modes of participation, that relate to both procedure as well as outcomes, are defined. These modes are used to categorise the different aspects within found participation strategies.

Within the SPD market the current role division is also relevant to understand the structure in which participation plays a role. As explained in §2.2.3, there are two relevant processes during and before a SPD. On the one hand there is the mainly facilitating government, which establishes the underlying policy guidelines or sets the rules that a SPD must follow. On the other hand in the actual SPD process, led by the initiators of the project. During both of these strongly related processes meaningful participation is considered to play a relevant role. While the emphasis is on participation during the project development process, this research also considers participation during the policy development process as depicted in figure 5. With regard to the project participation the develop is considered the main decision maker. Who, within bounds of the policy guidelines, structures an approach and defines the different modes that will contribute to the strategy. This is, unlike many current day literature approaches, not considered participation in which the community is considered the central object of study (Hager, Hamagami, 2020; Lucas et al, 2021; Soeiro & Dias, 2020). This research therefore, holds a developers perspective with regard to participation strategies (figure 5.).





*Figure 5. Schematic of key decision makers for solar park development strategies & relevant municipal policy*

### 3. Research design

This chapter will provide an overview of the research approach of this study. It discusses the different methods that are going to be applied in order to gather data and provides an overview of considerations that have been made in order to structure the research design. It closes off with the analytical approach to process the data and come to concluding outcomes on the central question.

#### 3.1 Research approach

##### 3.1.1 Qualitative research approach

To answer the main research question this research will apply a qualitative approach. As described in the introductory chapter, this research focuses on the different interpretation of the concept participation that solar park developers use. Specifically, this research applies the concept of energy justice to analyse the different participation approaches and how they contribute to a fair and just development process of land-based solar park. The following question was formulated to stand at the centre of the research:

*“What different participation approaches do land-based solar park developers apply and how can the idea of energy justice contribute to meaningful participation in order to realise fair and just development of ground-based solar park developments?”*

Qualitative research as an approach is appropriate to use when an in depth and detailed understanding of a complex issue is needed, when there is a desire to empower individuals and when the context of the studied object is crucial to understand the processes at hand (Creswell & Poth, 2018). Solar park permit grants are hardly a stand-alone decision as they amongst other aspects rely on policy decisions that have been taken at an earlier stage, the specific community based relation within the municipality and the political colour. The circumstances are very much site specific and thus understanding the context of the object of study is relevant. More so, multiple perspectives and meanings of participants play a central role in case study design (Creswell & Poth, 2018). The focus points in this study are the different stakeholders involved and how they conceive the participation approaches through their different perspectives, meanings and interpretations of solar parks. This is in line with the qualitative approach to understand the holistic relevance of the case in order to better understand the issues at hand. Based on these characteristics of land-based SPDs in relation to this research, it is considered critical to understand the natural setting and context.

##### 3.1.2. Exploratory multiple case study design

In order to fully comprehend the way in which participation is considered by different stakeholders, this research applies an exploratory holistic collective (or multiple case study) approach. Case study research involves the study of a case within a real-life contemporary context or setting (Ying, 2014). A case can be referred to as an entity which is concrete such as an organisation, an individual and a group. But cases can also be less concrete such as a relationship, a community, a decision making process or a specific project. It is considered

both a strategy but also more of a choice of what is to be studied rather than a method of research (Cresswell & Poth, 2018).

A case study approach for this research is relevant as it is suited to investigate real-life, contemporary bounded systems (cases) over time through detailed in depth data collection involving multiple sources of information. It is considered a suitable approach for both quantitative and qualitative approaches and can feature explanatory, exploratory and descriptive case studies. It thus features a suitable method for studying the process of a SPD from initiation to current point in time. When considering case study research designs it is important for cases that they are clearly bounded in their setting (Creswell & Poth, 2018). This holds true for SPDs as they are clearly bounded geographically (land-based) and subject to one distinct municipality in which the location is based.

As circumstances and policy regarding land-based SPDs differentiate between municipalities as it's decentralised, it is important to recognise that circumstances will be different based on where a development location is sited. In order to show different perspectives on the research issue this research therefore adopts a multiple case study analysis to show these different perspectives on the issue (Creswell & Poth, 2018). This multiple-case study design will use the logic of replication in which research procedures in each case are replicated (Yin, 2014).

When discussing qualitative case studies, researchers are reluctant to generalise from one case to another because the contexts of cases are case-specific. To be able to generalize findings it is important to select representative cases for inclusion in the qualitative study (Creswell & Poth, 2018). Findings might therefore be less relevant according to some scholars. On the other hand there are scholars who argue that: *“social sciences have not succeeded in producing general context independent theory and therefore has nothing else to offer but context dependent knowledge (Flyvbjerg, 2006, p. 223).”* And this is precisely that which the case study approach has to offer.

### 3.1.3. Case selection

With regard to the number of cases, no more than four or five cases should be studied in a single study as the intent of qualitative research is not to generalize, but rather to study the specific in-depth (Creswell & Poth, 2018). On the other hand, multiple case studies are often preferred over single-case studies as this makes direct replication possible and thus more powerful analytical conclusions (Yin, 2003). The cases will be selected based on a combination of purposeful sampling, snowball sampling and convenience sampling (Creswell & Poth, 2018).

In order to come to a selection of cases (table 1.) interviews were held with actors that were related to the field of study, namely: participation and land-based solar parks. In order to get an objective impression these individuals came from different backgrounds, such as a RE developer, representative of a local energy initiative, a researcher and a municipal project manager (Table 2.). In order to provide insights in the solar development market and participation approaches in specific the aim was to come to a case selection that well covered the range of different project initiators as well as differences in size. However,

during this orientation period it became evident that there are so many relevant aspects that cases could be selected on, that there would be no way in which cases would be mutually exclusive and encompass all various different aspects that they could be selected on.

In order to come to a final selection of cases it was then decided to follow generic guidelines. Following the ongoing debate on local ownership and financial participation of at least 50% it was decided to select at least one case that actively aimed for this. Secondly, there is a strong interest in local energy cooperatives as being project developers, therefore at least one case that was either fully developed by a LEC or in cooperation with another party was selected. Thirdly, as the research focussed on middle to large SPDs, it was considered relevant to include both of these groups. As a fourth case, the aim was to include a project which emphasized mixed use on the project location. Mixed use as understood as a combination of functions such as RE production and farming, explicitly excluding RE production and nature in this guideline.

Project	Size	Features
Solar park Bankhoef (Wijchen)	25 ha (roughly 25/75 panel/landscape division)	- 50% local ownership with local energy cooperative
Solar park Berg en Dal (Berg en Dal)	100 ha (50/50 panel/landscape division)	- large scale project - unique landscaping design with VNC
Solar park Vluchtoord II (Uden)	9 ha	- next to landfill - explicit focus on multi use RE production and innovative farming
Solar park Zomereiken (Oost Gelre)	8 ha	- 50% local ownership with regional energy cooperative

**Table 1. Overview of cases.**

### 3.2 Data collection

In a case study design it is recommended to develop extensive procedures to draw from multiple sources of data. Yin (2014) distinguishes 6 types of data that can be drawn from namely: documents, archival records, interviews, direct observation, participant observations and physical artifacts. This study applies several types of data for collection as is elaborated in the following paragraph. Furthermore a case study in which an in depth understanding is the aim requires that cases can be studied in their own setting in a close relation to the objects that are researched (Vennix, 2016). A proper case study will require detailed data collection from multiple sources and methods with the aim of data triangulation to fully understand the object of study. In doing so the internal validity and construct validity of the research can be strengthened (Vennix, 2016). This case study research therefore also applies different data collection methods from multiple sources as will be elaborated in the following paragraph.

#### *Primary data sources*

The main sources for data collection in this study are twofold. In order to reconstruct what the main elements of participation approaches were, how they were employed in the field and what considerations regarding participation were made, this study analyses the different participation reports that are available. Additionally reviewed are media reports from various sources on the solar parks in general and an additional focus to participation. Lastly, policy documents and their development are analysed. In total these three sources are assumed to have led to a fair degree of triangulation of the different sources classified as developers, the public and policy makers.

Secondly, in order to better understand the intentions and approaches taken by project initiators, semi-structured in depth interviews were held with case specific project initiators, municipalities and organised citizen groups (table 2.). The aim here is to contribute to the holistic view of the different cases to recreate the participation strategy that was used in the case. Interview respondents were questioned both deductively as well as inductively. The deductive questioning followed the approaches that came forth from the conceptual framework in order to guide data collection (Creswell & Poth, 2018, p. 148).

An interview protocol was constructed that featured categories related to the conceptual model (Appendix II). It provided an analytical structure in which the factors and dimensions are represented by specified questions. The inductive approach allows for overseen insights that can be relevant for understanding the specific cases. In doing so respondents are openly asked whether they noticed any further indicators that are relevant with regard to the topic at hand that could have fallen outside of the categories of the semi-structured interview. In order to be able to analyse the interviews held with respondents, they were asked if recordings were allowed to be made. These recordings were then processed into transcriptions that allowed for analysis (see 3.3 Data Analysis) and storage of the data. In addition to the case specific interviews, interviews were held with representatives of the different predetermined groups in order to strengthen the interview protocol beforehand and gain insights in the SPD market and its development. Transcripts were made only for the interviews that related to the case specific interviews as the additional interviews were primarily held to pre-test the protocols and gain preliminary insights into the market of SPDs.

### *Internship position*

In order to get a better understanding of the solar park initiator perspective, a position as an intern at a firm that has recently expanded their development business from roof-based solar projects to include land-based solar developments was taken by the researcher. This position made it possible to do informal observations on the intentions and work processes of project initiators. To some extent, this could be defined as a role of participant observer (Creswell & Poth, 2018). It also provided a good understanding of the current state of the land-based solar park business in the Netherlands, common participation approaches and current trends.

### *Secondary data sources*

Additionally to the primary data sources several other sources of data have been studied. To be able to better understand the political landscape on SPDs, current policy settings were studied and evaluated. Next to this, literature on several concepts related to SPDs have been studied ranging from and not excluding concepts such as energy justice, participation, community acceptance. This has been the foremost source of data in constructing the theoretical framework.

List of stakeholders that with whom semi structured in-depth interviews were held:

Stakeholder	Role	Stakeholder	Role
<b>Solar park Bankhoef</b>		<b>Solar park Berg en Dal</b>	
Pure Energie	Developer	RE Developer Zebra	Developer
Energiecoöperatie Leur	Developer / LEI	Duurzame Energie Berg en Dal	Local organisation
Municipality of Wijchen	Facilitator	Municipality of Berg en Dal	Facilitator
Leefbaarheidsgroep Hernen & Leur	Local organisation		
<b>Solar park Zomereiken</b>		<b>Solar park Vluchtoord II</b>	
Regional energy cooperative Agem	Developer / REI	RE Developer TPSolar	Developer
Municipality of Oost Gelre	Facilitator	Municipality of Uden	Facilitator
<b>Preliminary interviews</b>			
Municipality of Arnhem	Facilitator		
Werkgroep Dieren-Zuid klimaat actief	Developer / LEI		
Radboud university	Research department		
Horizon NL	Developer		

**Table 2. Overview of interview respondents.**

### 3.3 Data analysis

In order to reduce the vast amounts of generated texts into patterns that can be interpreted to useful insights, a method has to be chosen. As qualitative research allows for analytical generalisation it can be done in this study (Creswell & Poth, 2018). However, due to the low external validity of case studies in which limited elements are studied, recommendations that flow from the interpreted data should be reviewed critically.

The primary data sources are the policy documents, participation report, council meeting transcriptions and semi-structured in depth interviews. In order to analyse both sources properly the transcriptions of both sources were stored and uploaded to the software called Atlas.TI. This software allows for the transcriptions to be coded into categories, patterns and specific codes. In order to be able to analytically generalise findings, the aim was to systematically break down the transcriptions into parts and use codes and categories that led to certain patterns and relations. By doing this in a systematic and replicable manner the internal validity of the found patterns and relations increased. Important hereby is that Creswell and Poth (2018) suggest that data analysis in qualitative research should be both inductive as well as deductive. In order to do so the analysis can be considered as a two-step approach. The deductive analysis has been done applying a translation of the conceptual model into a codebook (Appendix III), which guided the analysis of the transcription. The inductive analysis was done by the constant reflection on the deductive codebook to interpret any outlying codes (and categories) to see if the conceptual model should be expanded and more importantly, if there were any new insights.

Typical when analysing multiple case studies, is to first give a detailed description of the specific cases themselves and the specific themes at hand within. This is referred to as a within-case analysis. This approach was followed up by a cross-case analysis as well as an assertion and interpretation of the insights of the cases and how they relate to each other. This comparison will be made in order to find similarities and differences (Creswell & Poth, 2018). These so-called assertions, will be reported in order to be able to draw conclusions from the lessons learned. The analytical software Atlas.TI also provides a function for cross case analysis. For this study exactly that approach has been followed, which can be seen in the structure of the research.



## 4. The cases studied and their approach to participation

### 4.1 Solar park Bankhoef (Wijchen)

#### 4.1.1 The project and its participation approach

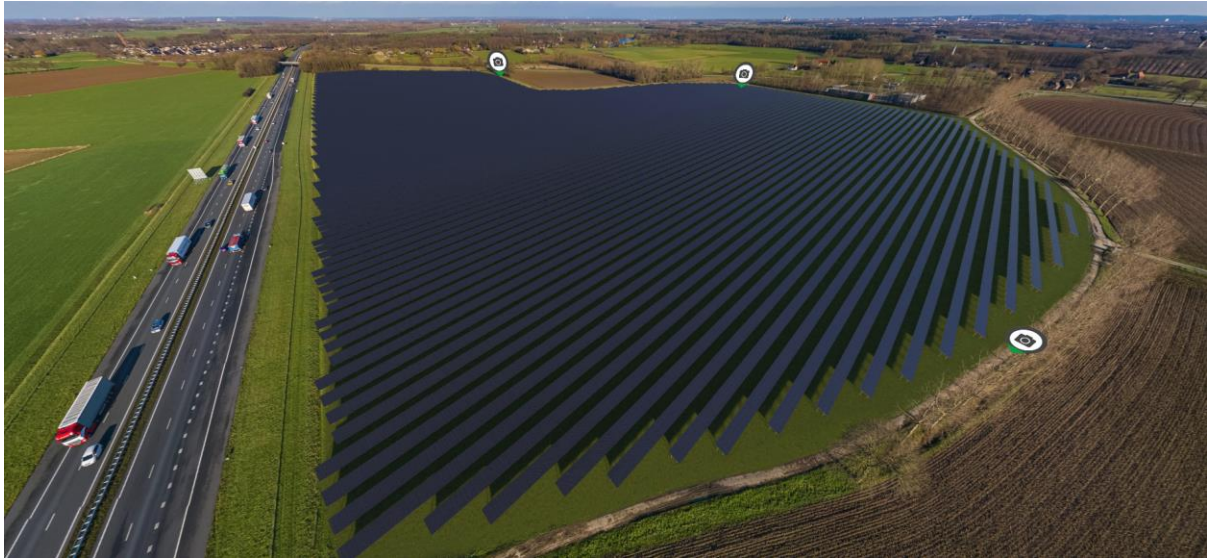


Figure 6. Visualisation & location case 1. Bankhoef (The Imagineers, Zonnepark Bankhoef, 2021)

Stakeholder	Role	Goal
Pure Energie	<ul style="list-style-type: none"><li>- RE developer</li><li>- RE supplier</li><li>- Project initiator</li></ul>	<ul style="list-style-type: none"><li>- Development, exploitation and maintenance of solar/wind projects</li><li>- green energy supplier</li></ul>
Energiecoöperatie Leur	<ul style="list-style-type: none"><li>- Local energy cooperative</li><li>- Project initiator</li></ul>	<ul style="list-style-type: none"><li>- Producing RE directly or indirectly</li><li>- Renewable energy supplier</li><li>- Stimulating locally produced RE</li></ul>
Municipality of Wijchen	<ul style="list-style-type: none"><li>- facilitating SPDs</li></ul>	Realising energy targets
Leefbaarheidsgroep Hernen en Leur	<ul style="list-style-type: none"><li>- Organised local citizens union</li></ul>	<ul style="list-style-type: none"><li>- Safeguarding citizen interests</li><li>- addressing citizen concerns</li></ul>

Table 3. Overview of stakeholder interviews case 1.

Zonnepark Bankhoef is an initiative for a SPD of around 25 hectares alongside the A50 highway in the Netherlands. Situated between the villages Hernen and Leur in the municipality of Wijchen (Gelderland). The land plots are privately owned and an agreement was reached with the owners for the development and exploitation of a solar park. Roughly 25% of this area is reserved for landscaping, which are to encompass the ecological

measures as stated by the municipality policy document (Gemeente Wijchen, 2020). This leaves a maximum of 18.75 hectares of actual solar panels to be placed in the project location. The current function of the land is agricultural and once turned into the planned solar field it should suffice for 10% of the municipal energy consumption (based on figures of 2019). The project has been initiated by two co-working partners, these being RE project developer Pure Energie and local energy cooperative Energie Coöperatie Leur (ECL). Both parties will become equal shareholders once the project is realised. The project initiators are currently closing in on permit application. This will be the second solar park to be developed in the municipality of Wijchen if the permit is granted.

Pure Energie is a RE company with over 25 years of experience in developing wind turbines and solar parks. In addition to being RE developer the company also offers RE as a supplier and has extended knowledge in location research, planning procedures and managing public dialogues. Prior to the publication of the procurement, Pure Energie had been in contact with ECL to discuss the possibility of working together on an initiative for a solar park. One of the first steps they took when they saw an opportunity for a SPD was to contact the ECL as seeking partnership with a local energy cooperative has become the standard approach to their RE projects (PC, Pure Energie, 07-2021).

ECL is a local energy cooperative founded in 2015 consisting of members mostly from the municipality of Wijchen. ECL has realised several smaller scale projects covering a small solar acre of 200 panels and several roof-based projects. The roof-based projects are publicly owned by the municipality which has led to close relations with the local government. Their projects so far have been funded by members of ECL with local ownership and return of revenue therefore stays within the municipality. As a result ECL (or cooperatives) in general are considered relevant for the energy transition in the municipality.

### ***Policy development***

Relevant for the development of this solar park is the precedent development of the first solar park in the municipality called solar park Kampbroek. During the project development of this solar park the municipality was working on a solar energy policy “Energieplan op Hoofdpijnen” (Gemeente Wijchen, 2018) which encompassed guidelines for future SPDs. Among other targets it formulated the target to realise a minimum of 30 hectares of solar energy productions before the end of 2023.

Following this policy document, the municipality of Wijchen working together with the next door municipality of Druten published: “Visie op zonne energie Druten en Wijchen” (Gemeente Wijchen, 2020). This policy document holds the vision of both municipalities with regard to the production of RE in the form of solar parks and further solidifies prior rules regarding this field. It formulates conditions to which SPDs should comply. Additionally, it holds a map which shows where SPDs are in line with policy. It was published shortly before “Leidraad Zonne-energie” (Gemeente Wijchen, 2020), a guidelines policy document on solar park initiatives, which opened up the procurement for solar park initiatives. This document containing the guidelines was based on the vision document for solar parks in the municipality and was not subject to a separate participatory procedure.

### *Participation approach*

The first draft of the solar energy vision was composed by Buro Waalbrug in cooperation with municipalities of Wijchen and Druten. A preliminary design was made and then during the consultation period introduced to citizens through public walk-in evenings, one in Wijchen and one in Druten. There were no determined times and citizens were allowed to walk in, collect information and ask questions. Feedback generated was bundled in reports and considered for the next draft of the vision. These events were visited by a reasonable number of citizens according to the municipality of Wijchen: *"It was not abundant, but a fair amount of people visited."* (PC, Gemeente Wijchen, 15-07-2021). Shortly after this final draft was adopted by the city council. This procedure in terms of participation can be considered scarce. However, respondents pointed out that a large amount of the content came forth from the RES and that stakeholders have had several opportunities to make their opinions and concerns well known. *"The municipality has adapted quite some regulation on the outcome of the RES programme."* (PC, LBH Hernen and Leur, 28-07-2021). In addition to this, information was adopted from the learning process during the development of solar park Kampbroek. *"Around Kampbroek things kept being developed which to a large degree determined the policy (PC, LBH Hernen and Leur, 28-07-2021)."*

Respondents also pointed out that they had no negative comments on the municipal participation procedure. Stating that a more intense procedure would not have had that much of an impact here. Several actors suggested that most people will become active when a certain project starts to directly affect themselves rather than become part of a process before this might be the case. *"There will always be people against a plan when it is developed in their backyard, they will give you a hard time (PC, Gemeente Wijchen, 15-07-2021)."*

Following the vision document and the procurement process, Bankhoef came out as the best fitting project. Submitted initiatives were judged based on a scoring matrix included within the guidelines document. The four criteria were:

- Public dialogue
- Landscape analysis and plan
- Lifecycle plan
- Public support and participation

The criteria public support and participation granted higher points than the other criteria as it was considered to be most important. Partially due to the participation section, their submission came out first in the selection process (PC, Gemeente Wijchen, 15-07-2021). With regard to public participation specific consideration was given for the partnership with a local energy cooperative, establishing a public fund, the degree of financial participation with local stakeholders and compensation for directly affected citizens (Gemeente Wijchen, 2020).

### ***Bankhoef's participation approach***

Late 2019 Pure Energie, after being in agreement with the landowner, reached out to several important parties within the municipality. Firstly with ECL to discuss the possibility of working together on this project. After which, they planned a meeting with liveability group Hernen and Leur (LBH Hernen and Leur) to acquaint themselves with one another and request advice on the public sphere and sentiment in the area. LBH Hernen and Leur is a well-known citizen organisation within the municipality which aims to connect different initiatives, organisations and individuals with each other as well as with the municipality. Working on different relevant topics within the municipality through different working groups within the entity. Energy transition and therefore solar parks being one important development area.

While working on the relationship between the ECL, LBH Hernen and Leur and municipality Pure Energie in agreement with the other parties started on informing the public about the project (Pure Energie, June 2020). This timing is worth mentioning as this came at a time where the project Bankhoef was not chosen from all the submitted initiatives later in June 2020. Therefore, there was no certainty at all that the project was allowed to work towards a permit grant. Whilst approved by the municipality there are other cases where the municipality finds this undesirable out of fear for the possibility of a backlash where citizens interpret this project as already being accepted and developed.

### ***First steps***

The modes of participation taken by PE mainly related to informing the public. Additionally, by seeking equal cooperation for the development there was access to citizen power through partnership with ECL, as ECL consists of local citizens. Through several means PE aimed to inform the public. A total of 450 addresses were informed by means of a newsletter and were invited to the first public meeting. In addition a website was aired with additional project information providing a means to get in contact with the project initiator and leave concerns through the provided project mailing address. This message was also spread via a local newspaper article and direct messages to various organisations, associations and other relevant parties. A total of 6 households are living in clearly closer vicinity of the project. Therefore PE approached these households directly by door to door visits.

While these actions were primarily for informing the various stakeholders of the project itself and the upcoming informative meeting, all stakeholder have since the project was started thoroughly been invited to ask questions, provide comments and make suggestions through one of the various means of communication provided. Any stakeholder was invited to provide consultation on the project's development.

### ***Following the first public meeting***

During and after the first public informative meeting which was visited by 40 people (Pure Energie, 06-04-2020), all citizens were also invited to participate in a working group that was initiated to become a more direct line of thinking along the project development by PE. Initially consisting of LBH Hernen and Leur, ECL, PE and IVN Rijk van Nijmegen, the group expressed concerns over lack of direct citizen participation. Another open letter was sent in a 300 meter radius of the project location. However, citizens remained largely reluctant to increase their degree of participation in the process. Data from all interviews state that various means were undertaken to increase active participation besides informing and

consulting, however, active participation from citizen stakeholders remained to be minimal. Especially, the involvement of critical citizen stakeholders into the process (PC, Pure Energie, 08-07-2021). As a response, Pure Energie once again invited all stakeholders to contact them or the working group. Offering various flexible constructions to get involved in more direct critical discussions on the project's development. (Pure Energie, 29-04-2020).

PE did, however, receive reactions through individuals and organisations reaching out with concerns. These notions were considered and often taken into account for the final plan initiative. PE says: "There is nothing to participate if the public does not want to. That means stakeholders have to become active. Which means providing input. You can aim to get good participation by reaching out to citizens, starting a working group and providing several means. But when there is no reply it stops." (PC, Pure Energie, 08-07-2021).

In July 2020, project Bankhoef was selected out of a total of 18 initiatives. Which meant that the municipality allowed them to apply for a permit application to realise the solar park. In cooperation with ECL they continued informing the public through 2 more informative public meetings, both visited by around 30 individuals. One after being chosen by the municipality and the latter before permit application when the final draft was finished. The working group is planned to remain active throughout project development. As the developers would like the group to play a role in the allocation of the means generated in the public fund, as well as remain a direct feedback line during the finance and construction phase.

### *Citizens' concerns*

The main concerns from citizens that live around the project location were that they did not want to be burdened by the project in any way whatsoever. While no firm resistance against the development has arisen, many concerns regarding environment, nature and other externalities rose during this phase of the development. Most issues were addressed through procedural tests on sound, reflection, ecological factors etc. In addition to this, many landscaping related issues were addressed (Pure Energie, June 2020). PE says that all these concerns, especially from directly impacted stakeholders could be integrated in the plan. The remaining concern is from stakeholders with a strong ecological viewpoint that will remain against the SPD as a matter of principle. This however is not something PE can address and is a policy related matter. "Because we basically gathered all concerns and input from the public, through the working group, public meetings, newspapers and individuals. We bundled this input and came to this plan." (PC, Pure Energie, 08-07-2021).

### *Financial participation*

#### *Project shares*

PE's original concept for financial participation offered two models through which ECL could become partial owner of the project. The first would include PE taking all the risks throughout the development phase. Then, once the project would hit the finance phase, ECL would be able to invest for a maximum of 25% of the shares. In this sense not giving ECL an equal partnership role in the project but taking away any risk for loss of funds in case the project would hit a breaking point.

The second model is the current model, where ECL becomes an equal partner in the project and therefore also in decision making. However, this required ECL to join in project development at an early stage and take part in the process costs. With ECL being a

relatively small energy cooperative they attracted a subsidy from the province of Gelderland to be able to participate in this business case.

#### *Public fund*

Financial participation is also offered through a public fund to which PE and ECL will donate 0,50 euro cents per produced KWh. This will provide a fluctuating annual amount depending on total production of RE. The public fund is considered to be a fund which has to contribute to the local society in one way or another as a way for all stakeholders to participate in the benefits of the project. It is currently unclear how this substantial amount of money will be spent or who is to benefit from it. PE has stated that they will play no role in its division and that it is a role for local stakeholders, such as ECL, the municipality or the working group. This discussion is shifted to a different phase of the project when it has become clear whether the park is allowed to be built or not. *“You should not control yourself, so in principle this is something that we will simply discuss in the working group. There is no set plan for that, except that it belongs to the local society” (PC, ECL, 13-07-2021).* *“The public fund, we agreed that this will be our contribution. And we will discuss with the local stakeholders what it will be used for” (PC, PE, 08-07-2021).* Several ideas and options were offered where this fund could be used for. Possibilities are discussed ranging among several themes, but fact is that it will contribute to the local society in one way or another. LBH Hernen and Leur possibly can play a big role in its division due to their local embeddedness.

The following modes of participation were applied during the process participation approach of PE and ECL:

<b>Procedural participation</b>		
	<b>Developer approach</b>	<b>Municipal approach</b>
<b>Informative modes of participation</b>	<ul style="list-style-type: none"> <li>- Project Website with all current and prior information (including reports on prior meetings working group, public meetings and newsletter)</li> <li>- Project mailing address</li> <li>- Open address newsletters (multiple)</li> <li>- Digital newsletter (if signed in for)</li> <li>- Visualisations</li> <li>- Media coverage</li> </ul>	<ul style="list-style-type: none"> <li>- Invitation through social media, local newspaper and municipal website</li> </ul>
<b>Consultation modes of participation</b>	<ul style="list-style-type: none"> <li>- Recurring working group sessions</li> <li>- 3 open public meetings</li> </ul>	<ul style="list-style-type: none"> <li>- Public meeting per subarea to consult and inform citizens per sub area of the municipality</li> <li>- Formal public consultations periods for policy and permit application</li> </ul>
<b>Partnership mode of participation</b>	<ul style="list-style-type: none"> <li>- Cooperation between ECL and PE in project development</li> </ul>	

<b>Financial participation</b>	
<b>Local ownership</b>	<ul style="list-style-type: none"> <li>- Sale of shares within ECL (with priority based on proximity until target reached) in order to reach 50% local ownership through cooperation with ECL</li> </ul>
<b>Public fund</b>	<ul style="list-style-type: none"> <li>- 0,50 euro cents per produced KWh (to be determined what the fund will be used for → “improving the local livelihood”) will be contributed to a fund</li> </ul>

**Table 4. Overview participation approach case 1. Bankhoef.**

#### 4.1.2. Solar Park Bankhoef, through the lens of energy justice

##### **Procedural justice**

###### *Decision making*

Within this project key decision makers are ECL and PE and the municipality of Wijchen. Through their joint project development ECL and PE are responsible for any final decision that is made during any phase of the project. They are however bound by municipal guidelines that have been established beforehand.

The municipality, during the procurement process, allocated a large amount of decisive points to developers that aimed to cooperate with local energy initiatives such as ECL. In doing so, they structured the guidelines in this sense that there would be not only an interplay between landowner and developer but also a direct relation with local citizens. And that participation was not limited to private investment in a portion of the shares, but also project control. *“We considered it important that it was not just the landowner who decided or the developer, but that it was done in agreement with one another” (PC, Gemeente Wijchen, 15-07-2021).*

With regard to this development, PE and ECL always had the final say. In terms of the proposed project size and ha of panels, citizens appeared to have little influence. However, they did seriously consider propositions made by the citizens regarding adjustments. Looking into the suggestion and providing feedback on why it would or would not be possible to adjust. These guidelines however were based on ongoing RES negotiations and discussions. And to a large part formed the feeding source for the final policy document on solar energy production in Wijchen and Druten.

The RES process is also partially an open process where various stakeholders are able to join in on the discussions. This form of policy development also allows for parties with primarily an individual interest to join in the debate and exert influence (PC, LBH, Hernen and Leur, 28-07-2021). As policy developer this field of expertise was relatively new for the municipalities, with the first solar park Kampbroek starting in 2015, which might make them susceptible for misinformation from private interest actors. Based on this practical experience, LBH Hernen and Leur stated that this policy document was a reasonable document which avoided going over a lot of beginner's mistakes that were made in Kampbroek: *“The piece they have written and to all the things they have to comply with is very reasonable and clear. It also helps to avoid making beginners mistaken again (PC, LBH Hernen and Leur, 28-07-2021).*

###### *Stakeholder consultation*

PE's approach to the project has been an extensive and inclusive one in terms of consulting stakeholders during the participation approach. Early on in the project the developer has aimed to include various stakeholders ranging from individuals to various organisations. Stakeholders in the process agree that PE has put extensive energy in trying to include various different stakeholders. Although consultation is not direct decision making, the input of various stakeholders was adopted in the final draft of the project. Specifically the working group was considered a strong feature of the plan, which acted as a more direct discussion and reflection group. Concerns ranging mainly between landscaping and negative externalities such as noise, reflection, visual impacts were properly addressed and researched. LBH Hernen and Leur stated that PE did their part in terms of responsibility and



organising participation. However: *"the interest from the villages (Hernen and Leur) was disappointing (PC, LBH Hernen and Leur, 28-07-2021).*

Before PE and ECL won the selection process they started the first working group meeting in which they consulted the members on what section the project could be further improved. *"Before we had won the selection, we already sat together with the working group to ask what do you guys think and how can we improve because then we can make the plan better" (PC, ECL, 13-07-2021).* LBH Hernen and Leur from their locally embedded role shortly after the announcement of the working group took their place in it: *"The LBH chose to place two members permanently in the working group for two reasons. What can we share with them from our experience and two, we can keep an eye out on what is going on and inform citizens first hand on the consequences of the park and tell them to account for this, look at that and consider this. But the reactions on these remained minimal" (PC, LBH Hernen and Leur, 28-07-2021).*

Even though consultation is not decision making in the through sense the developers, especially throughout the working group, consider the input coming from consultation as critical for project design. Ideas that are expressed are also followed upon: *"We planned the prior public meeting because the work group considered it wise. Therefore we did, you can see it works as intended" (PC, ECL, 13-07-2021).* The various organisations that were approached often provided information in terms of fields relevant to them. PE actively approached a list of organisations, IVN for instance decided to step into the working group to provide information on the landscaping design and different ecological species. (PE, 28-10-2020).

### *Information sharing*

In terms of information sharing the developmental stages of Bankhoef can be considered to have been well communicated. Initially and through various means, PE actively contacted possible stakeholders with ongoing updates. This process has been and is ongoing after the cooperation with ECL started. In some cases using personal approaches and with PE really stressing that there is a standard approach which is complemented by a more personal touch. *"Per project you have a standard approach and per project you will have to make adjustments. Some directly impacted citizens require you to make a phone call. I have a project with an elderly couple and after each newsletter I call them to stop by and explain it to them."* Following public meetings and working groups, meeting reports would be publicly posted on their online website and updates would actively spread through their newsletter's mailing list. Both the public documents as well as the data from the interviews, express a clear informative sharing process by the developers. With compliments to the approach PE (and ECL) has followed. In their own words: *"That first information meeting we received quite some critical questions and were applauded for the way we stood there and handled". (PC, PE, 08-07-2021).*

There were some considerations regarding private compensations to directly impact stakeholders. LBH Hernen and Leur suggested that private compensation was likely to have been offered to directly impacted citizens (PC, LBH Hernen and Leur, 28-07-2021). As there has been no disclosure regarding any compensation, it would be speculation to discuss how and if this influenced the sense of directly impacted citizens of the outcome of the project is unclear. It does, however, suggest that there are some financial aspects that are not completely transparent in this development. Another notion regarding the non-disclosure of

financial matters is the price paid for the land use for the solar park location (PC, LBH Hernen and Leur, 28-07-2021). However, any current member of ECL would be able to ask for transparency regarding the business development of one of their projects. Through this approach, citizens would be able to gain insight in these financial aspects by becoming a member of ECL. Whereas in other cases, where there is no partnership with an energy cooperative, these details would not be made public as it is private business exploitation and development.

## **Distributional justice**

### *Costs*

Costs of SPD Bankhoef consist of various aspects of monetary, environmental and social value. One of the main concerns of people in terms of costs is the impact of the solar park on the physical environment. The land plot will be occupied for a period of 25 years for the production of RE. Due to the politized notion that this subject is, some people argument that letting a portion of the land regenerate as it will be greenified and be subject to a stimulation for biodiversity the land will actually increase its net worth in terms of ecology compared to the intensive agriculture which it is being used for currently. The same statement is done by PE and ECL in their final project submission which was selected (PE, 03-06-2020). It also offers a guarantee for return of state before project development by means of a so-called baseline assessment of the soil quality.

SPDs might also have a monetary impact on the directly impacted citizens near the project location. SPDs are in many cases considered to have a negative impact on prices of real estate. However there is a legal regulation in place which calculates negative impacts on the direct environment. It is expected that individual agreements are made with directly impacted citizens. In that sense, these impacts might eventually not be considered as negative as compensation is offered. With regard to this case, there is no clear information regarding this. Directly impacted stakeholders were personally approached and some concessions were made: *“On the North and West side alongside the highway we will leave some space so people can make a round, there is an owner of a horse riding school and stable there who requested this. So that he can go round every once in a while and has the feeling that it's worth something to him”* (PC, PE, 08-07-2021).

As mentioned above the development of Bankhoef also brings with it potential social or societal costs. I write here potential as the exploitation phase will show whether or not this will be the case. Investment in the solar park through shares in ECL cannot be afforded by all members of society. Either they cannot afford or are not interested in investing. Therefore the wealth gap will strengthen if only the people with various means are able to acquire shares in the project and therefore their own local energy source. This is referred to as a possible social cost. However stakeholders in the development in Bankhoef are considerate towards the relevance of this issue. The working group expressed that there are concerns for this issue and that they are looking into how to address it. *“That system is not really right as people with a lot of money will be able to invest in such a park and the people who live around it with not that big of a wallet like the investor will hardly be able to participate”* (PC, LBH Hernen and Leur, 28-07-2021). This seems to have been picked up by ECL mainly who

are awaiting the results of an ongoing research hereof. *“ECL has said that they want to look at people with smaller wallets so they can participate, but how they will do that they don't know exactly, but the results of the research haven't been presented yet”* (PC, LBH Hernen and Leur, 28-07-2021).

### *Benefits*

Benefits of SPD Bankhoef also consist of various positive outcomes for stakeholders. Following the developments in the energy sector the municipality has been forced to put their resources on a policy field that was marginal before. Through the RES programme knowledge exchange has been ongoing for civil servants and municipalities started developing policy that handled SPD requests. As also the case has been in Wijchen. The field of expertise has become more relevant but also still in its experimental and learning phase. Policy is set on creating a more level playing field which brings for initiatives with more just and fair conditions.

In monetary terms the project has allowed for a large cash flow in terms of subsidy and RE sales from the project. Directly visible benefactors are ECL and PE through the revenue of the RE sales. Members and investors through ECL will benefit through their personal share investment as well as a part of the revenue for the cooperative as a whole. The revenue will fund projects to come which contributes to a further increase in projects which in their own term provide revenue but also contribute to environmental targets in terms of RE and further insulation of the build environment. One of the various project themes that ECL is active in. In this sense it can be interpreted as a contribution to the energy transition as a whole.

Through their private investment, individuals that take part in the shares of ECL also gain an individual interest. These SPD projects, partially due to the extensive SDE+ funding programme, are considered a stable investment therefore with a stable revenue. In addition, investors become decision makers in a part of their own RE consumption as Bankhoef.

Lastly, there will also be a public fund available to support local initiatives or organizations. Local citizens, possibly through the decision making of the working group excluding PE, will have a say in how this fund is to be spent. The aim is that it contributes positively to improving the local livelihood in one way or another.

## 4.2 Solar park Berg en Dal (Berg en Dal)

### 4.2.1 The project and its participation approach

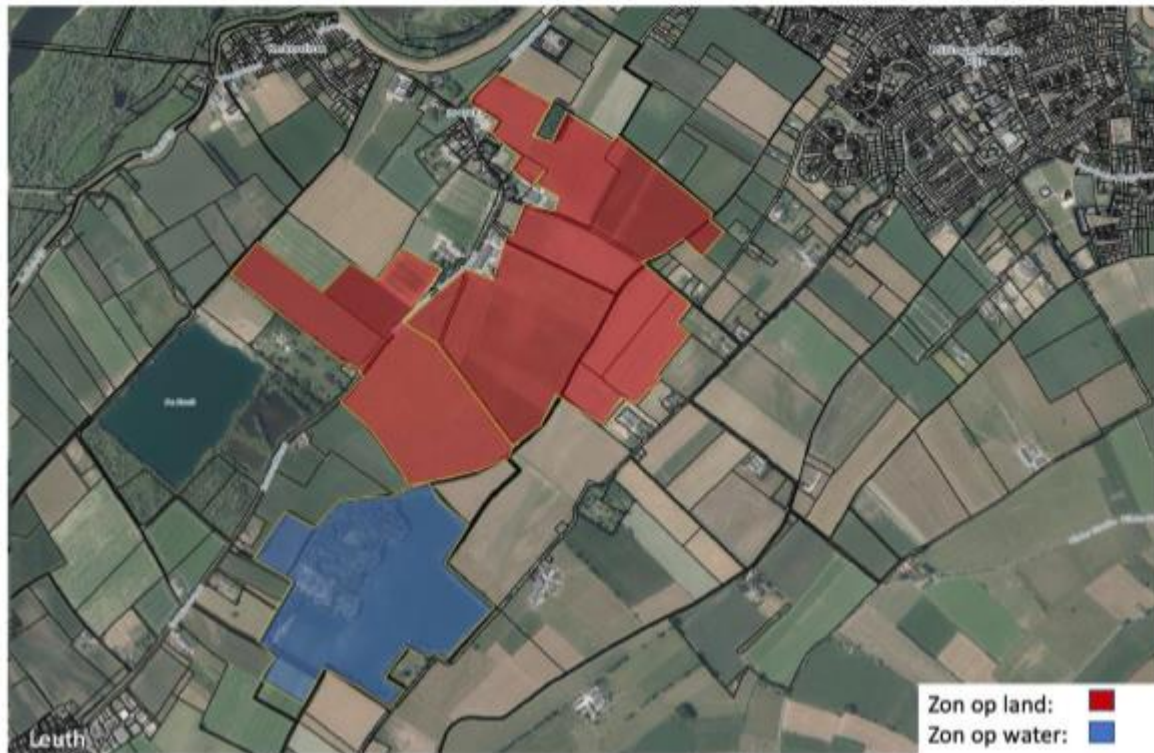


Figure 7. Project location case 2. Berg en Dal (Zebra, 06-10-2020)

Stakeholder	Role	Goal
Zebra	RE developer	Development and exploitation of ecological solar parks
Municipality of Berg en Dal	Facilitator	Realising energy targets
Duurzame energie Berg en Dal	Organised local citizens union	Safeguarding citizen interests - addressing citizen concerns

Table 5. Overview of stakeholder interviews case 2. Berg en Dal.

Solar Park Berg en Dal is an initiative of Zebra backed by the investors ABO WIND and Statkraft working together with Vereniging Nederlands Cultuurlandschap (VNC). The land plots are privately owned and an agreement was reached with the owners for the development and exploitation of a solar park. The initiative is for a solar park with a gross size of 100 hectares of project location and the current function of the land is agricultural. This SPD is unique in the sense that it will be developed with a 50/50 division of solar panels and landscape. In many cases the common division ranges between 80/20 to 70/30. Another unique feature of this project is the fact that of the 50ha of solar panels a fraction of it,

namely 7ha, will be water-based on the nearby sand extraction pond. The project was selected in April 2020 by the municipality (Zebra, 28-10-2020). The project is currently in early stage after signing a letter of intent between the municipality and the initiators in July 2021 (PC, Zebra, 24-07-2021). The ongoing process has to eventually result in a definitive plan which follows the guidelines as they are formulated by the municipality in order to apply for a permit. The permission to start working towards a permit grant was given to Zebra and VNC. The municipality considers this project a pilot and is part of a learning experience with regard to SDP's and RE policy which is to be reviewed by 2023.

Zebra, locally based in Nijmegen, specialises in sustainable energy technology with a focus on solar, biomass and heating and district heating systems. Having experience with over 450MW of gross solar project potential, they are working together with ABO WIND and Statkraft and taking on the project management and public management more specifically.

VNC, formally an association for Dutch landscapes, is working closely with Zebra in developing the ecological aspects of the solar park. VNC, originally against all land-based SPDs (exceptions for solar intense areas such as deserts), has made an exception for this single project in order to determine whether or not SPDs can or cannot contribute to ecology (VNC, 2020).

### ***Policy development***

The municipality of Berg en Dal adopted the ambition to become climate neutral by 2050. One of the means in order to reach this ambition is by locally produced large scale renewable energy through various means (Gemeente Berg en Dal, 2017). However, the sentiment was that the municipality has its concerns regarding land-based solar, wind and biomass based energy produced. Eventually adopting the fact that only roof-based solar panels would not suffice, they started working on solar energy production and working out a spatial visioning document which included policy guidelines on SPDs. *"We have issues with solar energy, we have issues with wind turbines and we have issues with biomass. That is a difficult starting point"* (PC, Gemeente Berg en Dal, 21-07-2021).

### ***Municipal participation approach***

In order to come to the spatial vision for RE production, the municipality split their jurisdiction into three areas, namely Groesbeek, Beek en Ubbergen en Millingen aan de Rijn. In all three of these areas, discussion nights were organised in which citizens were invited to discuss and consult regarding preferences, concerns and considerations with regard to wind and solar energy. While the council ruled out wind energy production for the near future it was however included as a topic next to solar energy during these public discussion nights. As civil servants stated that: *"We should consider wind turbines in this story to clarify that even though we all say we want to focus only on solar we should consider people might actually do want a lot more wind energy"* (PC, Gemeente Berg en Dal, 21-07-2021). By means of discussing, drawing and placing objects on large scale maps that had been provided, citizens could discuss the various pro's, cons and possible locations for either means of RE production. They were informed of the municipal ambitions, current policy and the

consumption of energy and invited citizens to think about the various considerations and ideas. Around 250 citizens visited these public nights, which according to the municipality: *"More people could have, we arranged rooms for more people, but we cannot force citizens to join"* (PC, Gemeente Berg en Dal, 21-07-2021). Citizens were informed and invited through various channels such as the municipal webpage, social media (FB/Twitter) and local newspapers / media groups.

This process led to a list of citizens' focus points, suggestions and guidelines as well as four areas which were considered as better locations for solar energy production than others. After consulting these findings internally with several departments such as landscaping, tourism and economy, the municipality formed the spatial visioning on renewable energy. This document was then opened up for the public to receive formal views from citizens. The final draft consisted of 4 areas where solar energy was preferably clustered. Outlying areas were not cancelled but considered less favourable, which meant that initiatives were still possible outside these search areas: *"We initially concentrated it in the 'search areas' because we did not want them spread all over the municipality, We did not want confetti. That was the major reason to go for search areas instead of exclusion zones"* (PC, Gemeente Berg en Dal, 21-07-2021). Based on these four areas and the ambitions, it was calculated that the four search areas would have to be covered with around one-tenth with solar panels. The council however, ruled out two search areas based on their own thoughts as well as the input from citizens that was provided. In order to still comply with the ambitions, the remaining two search areas would have to be covered with one-fifth with panels, which the council members accepted: *"The consequence was that in order to reach the goals you'd have to cover 18-20%. That number was then also discussed in the council meeting and agreed that the search areas would be covered more"* (PC, Gemeente Berg en Dal, 21-07-2021).

### *The first pilot projects*

The adapted vision for RE was established by the council in December 2019. Following the developments, the board decided in March 2020 to accept the first three pilot projects and to consider accepting up to another two in late fall the same year (Gemeente Berg en Dal, 17-03-2020). Before the vision was established by the council, several requests for SPDs were already submitted by developers (PC, Gemeente Berg en Dal, 21-07-2021). The vision thus also encompassed guiding lines to which SPDs would preferably have to comply. One of the main elements of these guidelines, is to engage in a public dialogue with the stakeholders. Additionally it stresses local benefits, positive landscaping and ecological benefits. With regard to the public dialogue there is no clear prescription. Developers were open to submit their own ideas. There was however a participation memo (Gemeente Berg en Dal, n.d.) in development, which could be used as a blueprint for the initiative of Berg and Dal (PC, Gemeente Berg en Dal, 21-07-2021).

Initially, the municipality selected three projects that were allowed to continue working out their plans, come up with a participation plan and start the public dialogue. Compared to Bankhoef, developers did not initiate the public dialogue before getting conclusive feedback on whether or not their project was allowed for the next phase. Under light political pressure from the alderman the selection of the pilots was pushed. At the same time, the plans with initiatives started to pile up into the dozen (PC, Gemeente berg en Dal, 21-07-2021). This process might have been delayed slightly, to allow some developers who were still working out their ideas some time to do so properly. A fair reason for this is that the municipality was

already aware of a few additional developers that were already writing plans (PC, Gemeente berg en Dal, 21-07-2021). This might have yielded even better or more novel plans, however the projects selected were likely also to have come out best in the second round in which the municipality decided to select an additional 0, 1 or 2 projects. Project Berg en Dal however, was selected in the first round based on the aforementioned features.

Another remark regarding the policy guidelines was the remark that beforehand the guidelines did not include set numbers with regard to project size. While this did allow for unique projects to be submitted such as SPD Berg and Dal, it resulted in political discussion and a debate for citizen concerns. It also brought insecurity for the initiators of the project on whether or not their project after being accepted fit in the policy and would be allowed to go for permit application (PC, DE Berg en Dal, 26-09-2021).

### *Structuring financial participation*

With regard to the policy guidelines on participation and financial participation, there were no terms on local ownership and degree of financial participation. The idea was that due to the size of the project, financial participation was unlikely to be of truly local basis. Therefore the public dialogue would function as the process that is to determine how the financial participation with regard to this project should be constructed. This is eventually to be agreed upon by the council members at a later stage. In this sense the municipality plainly expects the developer to come up with a high standard financial participation plan (PC, Gemeente Berg en Dal, 21-07-2021).

### *Influence of the RES*

It should also be noted that the vision development for Berg en Dal was formed and established before the initial stages in the RES dialogue were held. As a result, the municipality of Berg en Dal was able to go through the above process without the pressure from regional politics and ambitions. Therefore the selection to focus on solar energy in line with the municipal ambitions were the outcomes of the municipality's own process. This participation process also was conducted on the more local scale instead of on the regional RES level which meant that the local embeddedness is considered more advanced. This comes forth from the experience of the civil servants that people tend to get more involved near the end of policy and when it's more local (PC, Gemeente Berg en Dal, 21-07-2021). Trying to get citizens more involved in policy making on the RES level would probably have been more difficult than what currently on the local level could be achieved (PC, Gemeente Berg en Dal, 21-07-2021).

### ***Berg en Dal's participation approach***

Zebra's approach to participation with regard to SPD Berg en Dal is split in two stages. The first stage runs until permit grant. The second stage focuses on continuing the participation process after permit grant. The first stage will therefore mainly focus on how the landscaping is to be developed and the physical design of the solar park. The latter will have the focus on spatial processes and the in depth construction of the financial participation (Zebra, 16-09-2020).

### *The first steps*

One of the primary steps lining up with Zebra's participation approach was formulating a participation plan. As there were concerns regarding the involvement of citizens in the project design the plan was discussed in the city council. The plan was established following discussions between directly impacted citizens and Zebra (Gemeente Berg en Dal, 29-10-2020). The aim of this participation plan was threefold:

- Project design of the park and landscape based on citizen engagement
- Design of the financial participation fitting with expectations
- Delivering a report of the whole participation trajectory up until permit application.

This early recognition of the citizen's needs yielded two specific outcomes. There is a strong desire for expert consultation with regard to externalities that the park might bring forth, this ranges from landscape, noise, fire hazard, financial loss, impact on tourisms, long views. Zebra vowed to address this by organising expert sessions for citizens that will go into these various concerns and how solar parks might impact them (Gemeente Berg en Dal, 29-10-2020). Secondly, citizens expressed that the lead time for participation with exclusion of the financial structure should be followed up at a reasonable speed. Which meant that the time between different meetings should not exceed up to 2 months. This was addressed in the planning by Zebra.

### *Informing the public*

Shortly after the participation plan had been written, Zebra organised two public meetings with directly impacted citizens. Main purpose to inform the public of the development and answer questions. Zebra had contacted individuals beforehand in order to work on the participation plan, however broad informing of the public had not been considered wise as negotiations with land owners were still in an uncertain stage (Zebra, 06-10-2020). Considering the ladder of participation the main emphasis of these two public meetings was step 3, informing. Explaining the various conditions, stakeholders, considerations, project scale etc that Zebra is working with to draft the first project design. Both meetings were affected by the ongoing circumstances as a result of the Covid-19 measures. The first meeting had to be limited to 30 citizens. The second meeting had to be held online. Discussions and questioning was likely to be less as a result of this.

It is worth mentioning that the developers, during this second meeting, invited the organised opposition group known as 'Duurzame Energie Berg en Dal' to take a seat at the table of the digital session (Zebra, 28-10-2020). Given ample time to name their concerns and describe the various objections they have on the then current state of the project. In response the alderman of sustainability reacted to concerns that were named. No consensus was reached between these two parties however it provided a clear platform in which both parties' stances could be thoroughly explained.

A second round of sessions was held following the informative meetings. These were held in private discussions or via online designing sessions and thus focussed on consulting various stakeholders for their insights and concerns. Stakeholders were able to sign up by reaching out to Zebra or signing up online. Zebra invited people to reach out to them through various



means during the informative meetings. Zebra states to have spoken to nearly all citizens that surround the project area: *"This is the result of all, no not all, but a lot of the surrounding citizens"* (PC, Zebra, 24-07-2021). The emphasis of these designing sessions was to consult citizens on their preferences and concerns regarding the outlines of the project. Feedback ranged from landscaping, to functional concerns, long views that could be obstructed etc. But the main concern of citizens was to make the project physical, to come up with a first draft so people actually had something concrete that could be discussed. Based on all the input, Zebra has currently worked out this first sketch and will be starting another round of consulting discussions with citizens through the means of this first design. Zebra states that it was necessary to hold the first consultancy rounds to get general feedback on major concerns. These upcoming rounds will, as a result of the first physical draft, consider much more the details of the project and focus on a more micro scale: *"You notice that when things become more concrete you get a whole different discussion. You will get the microlevel of NIMBY. How does it affect my house, my views, the radio controlled aircraft landing zone"* (PC, Zebra, 24-07-2021). As the first draft made the project more concrete to discuss, it will yield more specific feedback for the developer. At the same time, however, it puts more pressure on the developer and the various stakeholders involved as the project developer has to weigh the different consults of citizens and come to a fair proposal: *"You try to treat everybody equally and have to make fair consideration of all personal interests, but you can already see that first draft to raise a lot of discussion"* (PC, Zebra, 24-07-2021).

On a side note: Zebra has planned to establish a public advisory council after initiating the SP procedure to structure the engagement with the public more. This council would consist of directly impacted citizens, inhabitants of the surrounding villages, any local business, the municipality, VNC and open to additional stakeholders. The aim of it is to consult, advise in order to increase the general acceptance of the plan, reduce any inconveniences that might arise and work out the financial participation. In addition to getting a more direct source of information with regard to the legal spatial procedures and studies underlying the development (Zebra, 16-09-2020). Currently the council is yet to be established as the spatial palling procedure has not yet been started.

Secondly, Zebra has announced that they are looking into organising 'unique' actions to reach out to citizens besides the more 'common' means such as public meetings. Different means have been described in the participation plan such as on-location public meetings within the project area. Or going into public meeting places such as a local marketplace to communicate the project and actively look for the dialogue with people (Zebra, 16-09-2020).

### *Financial participation*

With the large scale of the SPD, the financial participation dialogue has thus far been rather limited and is still in a largely unclear phase. The developers have the intention to let the 'local' public participate financially in the project up to 50% of the total investment cost. The distinction of what is direct is however not specified and neither is the definite construction as to how this will be done (Zebra, 16-09-2020). The dialogue regarding the structure of financial participation was scheduled to start much sooner, however, since the SP procedure will not be initiated on the short notice this discussion has also been postponed. Based on input from the public dialogue and in specific the public advisory council, which is to be established when the SP procedure is initiated, the final financial structure will be

determined. In this sense, it is currently also unclear to what extent citizens will be able to invest in the development. It is also still unclear whether the structure will be based on bonds or shares and thus. A share structure would most likely also include local ownership. The financial structure, however, does not appear to be a main concern of the citizen at the current stage of the development as landscape and other externalities are discussed more frequently.

One of the commitments that Zebra has made, is that they will either establish a public fund or construct some sort of local arrangement (Zebra, 16-09-2020). A public fund, which is based on annually produced MWh, will yield an annual amount of money. However, in contrast to for instance SPD Bankhoef, this is no set amount and will depend on the public dialogue in which both control of the fund and the annual contribution of the project to it will have to be determined. There are also no certainties regarding local arrangements. In short, financial participation is still largely left open besides the ambition to let the public participate financially for 50% in one way, or another.

The following modes of participation were applied during the process participation approach of Zebra:

Procedural participation		
	Developer approach	Municipal approach
<b>Informative modes of participation</b>	<ul style="list-style-type: none"> <li>- Project Website</li> <li>- Project mailing address</li> <li>- Visualisations (through interactive technology)</li> <li>- Media coverage</li> </ul>	<ul style="list-style-type: none"> <li>- Invitation through social media, local newspaper and municipal website</li> </ul>
<b>Consultation modes of participation</b>	<ul style="list-style-type: none"> <li>- Establishing a public advice council (yet to be established)</li> <li>- Multiple meetings / sketch sessions with directly impacted citizens</li> <li>- Multiple open public meetings for citizens to feedback the sketches</li> <li>- Expert meeting regarding noise, reflection, technics,</li> </ul>	<ul style="list-style-type: none"> <li>- Public meeting per subarea to consult and inform citizens per sub area of the municipality</li> <li>- Formal public consultations periods for policy and permit application</li> </ul>

Financial participation	
<b>A form of financial participation</b>	<ul style="list-style-type: none"> <li>- Whether this is a bond based structure or project shares is yet t.b.d.</li> </ul>
<b>Public fund OR local arrangement</b>	<ul style="list-style-type: none"> <li>- Specifications regarding the contribution per MWh is t.b.d.</li> <li>- Any form of local arrangement is t.b.d.</li> </ul>

*Table 6. Overview participation approach case 2. Berg en Dal.*

#### 4.2.2. Solar Park Berg en Dal, through the lens of energy justice

##### **Procedural justice**

###### *Decision making*

Regarding this development there have been a number of key decision makers that have played a role up to the current stage of the project. Following the national developments, the municipality worked out a policy regarding RE. The alderman of sustainability pushed to initiate pilot projects for SPDs that were waiting for approval: *“There were a lot of project proposals that were waiting for a municipal response. The alderman really wanted to get started with specific projects”* (PC, Gemeente Berg en Dal, 21-07-2021). Based on the guidelines, civil servants selected Berg en Dal as one of the solar parks. The policy that resulted in guidelines was partially based on the input from a round of citizen consultation meetings. The policy, however, left room for debate among the municipal council regarding projects and their size and specified search areas.

###### *Citizen empowerment & politics*

The subject is highly politicised and an organised opposition has stood up both civil and political. Though the council appears to have become more on one line with regard to SPD Berg en Dal, the upcoming elections and council shift could also shift the debate in a different direction (PC, DE Berg en Dal, 26-09-2021). Eventually once Zebra initiates the SP procedure, the municipal council will have to judge based on the process project plan and the process with regard to participation whether or not this project will be granted a permit. *“Eventually there will have to be a plan and the council will have to decide on that. Citizens do not decide whether or not it will be built. Citizens can cooperate with the developer to shape and make adjustments to the plan. They can say we refuse to cooperate and then it's a matter for the council to decide”* (PC, Gemeente Berg en Dal, 21-07-2021). As developer, Zebra also sees this relevance of the decision making by the council, however aims to closely involve citizens in the process. *“The council makes or breaks the plan. But the citizens are just as important because eventually it's about them. But if you look at pure efficiency then you should focus 100% on the city council. But I do not believe in that”* (PC, Zebra, 24-07-2021).

SPD Berg en Dal has the ambition to let the public financially participate, however actual citizen empowerment seems to thus far not play a significant role, if any at all. If citizens desire to influence the definite plan and thus the project outcomes they are invited to participate actively in the various sessions organised by Zebra. However, key and final decision making remains at the political level and thus the council. In order to tackle this, a group of citizens have united in an organisation and try to get decision making through an organised lobby to influence the council members and their stance with regard to the SPD. *“We should not start to mingle when the decisions are being made. You need to express your input and concerns long before. That's what we have been doing for the past half year”* (PC, DE Berg en Dal, 26-09-2021).

### *The importance of landscape in decision making*

As the participation dialogue focuses on landscaping and project design. The discussion of whether or not solar parks are allowed, what size and where, has long passed at this point. The policy development phase is where this discussion was done. The same notion was expressed by both the developers as well as the alderman during public informative meetings. As project developers Zebra and VNC eventually make decisions regarding the final plan design. Zebra aims to objectively weigh the various insights that the stakeholders provide, however, as a developer they are bound by the available budget and ensuring that the final plan remains profitable and a worthwhile investment compared to the risk.

Zebra, in terms of decision making, is bound by the investors ABO Wind and Statkraft. VNC, on the other hand, is largely the decisive player with regard to landscaping in order to comply with the commitments made on ecology and biodiversity. Zebra also acknowledges that a project this size is only possible here due to the cooperation with VNC as a partner, which guarantees the commitments made with regard to the landscape ambitions. Just as the council is able to make or break the plan, so is VNC. *“He is the one who can make or break the plan. We need him as a significant critic, as shepherd of the project area saying we’ll make something good here, you cannot put a price on that” (PC, Zebra, 10-08-2021).* As VNC is an initiator of the project they hold a unique position as they are originally against any and all SPDs. Working on this project only on the notion of deciding once and for all if solar parks can or cannot contribute to ambitions of nature development.

### *Stakeholder consultation*

Through various means, Zebra aims to consult all stakeholders who are in any way involved. Stakeholders are invited to reach out to Zebra, individually through the project website or other available means. In addition to this, Zebra organises stakeholder sessions to inform and consult stakeholders. Their role, however, is to make an objective decision amongst all these various preferences: *“Someone wants panels on this spot, the other wants a long view and the third a large hedge. Those preferences are contradictory. You will have to make concessions, but what helps is making the plan visual. When it becomes visualised you get a whole other kind of discussion” (PC, Zebra, 10-08-2021).*

Zebra is careful to also address the opposition to their plan and by means inviting DE Bergen Dal to take part in the public discussion and being able to name their concerns and openly discuss with the alderman of sustainability. Critics are rather invited to share their views instead of staying in the background. Zebra realises that this project is unique and requires a lengthy and intensive participation approach to reach its goal, which is to eventually be granted a permit without having to go through the council of state (raad van state). *“There are several developers who do things differently, go through the standard approach of 3 public meetings and that’s it. That will not be enough in this case” PC, Zebra, 24-07-2021).*

### *Information sharing*

Citizens are thus to consult freely on the process, leaving their remarks with the developers through various channels. In terms of information sharing some remarks can be made. In the participation plan the developers agreed in line with the preference of citizens to follow up on the public dialogue without leaving large gaps in time. While the public meetings have been saved and stored online and published through Zebra’s project website there are no reports

to be found on the specific input any stakeholder has provided. There is a large quantity of information to be recovered from the opposition party DE Berg en Dal. Zebra is about to publish their first project draft which is supposed to be a combination of all this input. However, since their most recent information sharing session it has been close to a year since. This does not fit the aim of ensuring that the participation procedure would be conducted in a period in which events follow up not longer than 2 months' time between them (16-09-2020). DE Berg en Dal remarked that a part of their concerns could be addressed by visualizing the project, as it currently stands, this would also contribute to making the dialogue more constructive as they could see how their concerns are or are not dealt with. Most notably the division of solar panels and 'landscaping' throughout the total project area. A question which DE Berg en Dal has been asking for a long time. The municipality agreed on numbers with the developers however this agreement has not been made public (PC, DE Berg en Dal, 26-09-2021). Only the questions asked by the council regarding the agreement have been made public. While this covers private business agreements between municipalities and a private party, remarks made by DE Berg en Dal regarding information sharing and transparency can be considered legitimate. The sheer project size however would also be a political decision, however citizens are free to, as they are doing currently, lobby to influence council members. By hiding this information it becomes difficult for them to do so directly.

On a more positive note of knowledge sharing, Zebra does address the gap in knowledge between the developer and citizens by aiming to organise expert sessions that address various externalities which citizens might be worried about. Zebra also expresses that it would have wanted to provide an earlier visualisation of the project however is dependent on the investments done by ABO wind and Statkraft (PC, Zebra, 24-07-2021). Now that one of their milestones, the letter of intent, has been signed, more funding for any project aspect will become available. It is important to remember that in relative terms this project is still in a comparatively early stage to for instance Bankhoef.

## **Distributional justice**

### *Costs*

In terms of costs the SPD will have a large impact on the local landscape. 50ha of solar panels will have a physical impact on the current far sights and potentially the accessibility of the area. Tourism is an important sector for the municipality of Berg en Dal and some citizens fear that the SPD might cause tourists to be less interested in the area (PC, DE Berg en Dal, 26-09-2021). Secondly, some citizens around the project area feel they are getting closed off as along the northern side of the area they are cut off by the river Waal and on the eastern side by the borderline with Germany. As a result there is the fear that economic and touristic activity might drop in the area which as a result might impact the citizens in a larger area than just the directly impacted. These possible externalities are currently not considered well enough (PC, DE Berg en Dal, 26-09-2021).

There is also an expected impact on the houses directly surrounding the project location. Fees are offered that are supposed to compensate for this loss, however as citizens state money can only compensate for the financial loss. The physical impact is not solved by paying an x amount of money and also should not (PC, DE Berg en Dal, 26-09-2021).

### *Benefits*

There are some discussions on whether or not the SPD also brings benefits. The ambition of SPD Berg en Dal is that the second part of the development, the 50% landscaping, is to lead to a stimulus and increase of ecology and biodiversity. VNC states that the current use of the land has led to barren fields with an ecological value near 0 due to intensive productions with the use of fertilisers and pesticides. With the construction of the SPD a large part of the land will be landscaped with green elements and will become an ecosystem for various species. In this sense the SPD can be considered an improvement as the second part of the SPD, the solar panels will (likely) not further degrade the land. There are both supporters and an opposition for this idea among citizens. Some say a solar park this size can never be an improvement to the landscape and its ecology (speaking of the part with solar panels). Others embrace the idea and have challenged Zebra and VNC to make their statements true (PC, Zebra, 24-07-2021). They are supportive of the development of solar energy especially with the boost to ecology.

Alongside the restructuring of the landscape the SPD also brings financial investment and revenue to the area. Due to the project size SPD Berg en Dal is a multi-million project. In the agreements with the municipality the public will be invited to invest together with the project developer and thus also share in the expected revenue. It is currently still unclear whatever form this financial participation will solidify into as it has yet to be determined together with the stakeholders in the public dialogue. Local ownership however, in the true sense of the word, is not expected to be realistic due to the project size. A portion of the citizens might be willing and able to invest in the project however it is unlikely that it will be enough to come to the possible 50% shares (or bonds) to be owned in the local area. If it would be the case that citizens will be able to invest up to 50% of the shares then it would be more than likely that the surrounding areas would have to be allowed to join in.

The financial participation of project Berg en Dal also brings concerns for all stakeholders involved. All stakeholders express that financial participation is only for the people that can actually afford and are willing to. *“Who can invest in that. Usually the people with a big wallet anyway”* (PC, DE Berg en Dal, 26-09-2021). The public dialogue which is supposed to shape the financial participation before project realisation, is to address that issue.

Another financial structure that is to be offered is either the realisation of a public fund or some means of arrangement that is to benefit the local community. The developers have submitted to either one of these options however, with regard to the size of compensation of the fund or what means are available for the arrangement there is nothing certain yet. As little is known, only little can be said with regard to financial participation. Developers have made promises with regard to several options, however the specification of these promises, also covering the financial cut, have been left open. Zebra has, in order to support citizens in these considerations, publicly asked the chairwoman of a local energy cooperative with experience in citizens participation and these financial matters to assist in the discussions and come to a fair decision making.

## 4.3 Solar park Zomereiken (Oost Gelre)

### 4.3.1 The project and its participation approach



Figure 8. Project design & location case 3. Zomereiken (Haver Droeze, 2021)

Stakeholder	Role	Goal
Coöperatie Agem (Cooperative Achterhoekse Green Energy company U.A)	Regional energy cooperative / initiator	Producing RE, Promoting energy saving, knowledge exchange. Supporting the local energy transition, RE supplier
Municipality of Oost Gelre	facilitator	Realising energy targets

Table 7. Overview of stakeholder interviews case 3. Zomereiken

### Case introduction & Policy development

Solar park Zomereiken is an SPD located in the municipality of Oost-Gelre. The project location is around 15 ha of which just under 11 ha are planned to be functioning for RE production. The remaining four ha will be landscaped to highlight the cultural heritage of a military investment from the 17th century referred to as the '*Grolsche linie*'.

The project is being developed by Sunvest, part of ProfiNRG, one of the leading solar energy companies in the Netherlands. Sunvest is co-developing the SPD together with

Agem on an equal basis meaning that they share both share in the risk and 50% of the shares. Sunvest was not able to participate in an interview for this research. Agem is a regional energy cooperative that came forth from the implementation of regional policy of 8 municipalities in the Achterhoek region. From 2018 onwards local energy initiatives were allowed to join. Agem has three ambitions which direct their business: Stimulating energy saving, being an energy supplier and the production of RE. The main term on which Agem would cooperate with Sunvest in this development is the realisation of 50% local ownership. Through a newly established cooperative, citizens will be able to invest and become owners of a part of the 50% shares.

Solar park Zomereiken came out first in a procurement process in 2019 organised by the municipality. Following municipal policy (Gemeente Oost-Gelre, 2018) the ambition to become energy neutral in 2030 was solidified and a procurement process was announced that would invite developers to propose initiatives. The policy was written based on the input of different stakeholders, including citizens. In 2018 three public sessions were held which were aimed at generating ideas and conditions on how RE should be generated in the municipality. The first two focussed on consulting the stakeholders and the last one was mainly reserved for feedback on the input the municipality had received from the participants. The policy included an evaluation form which described the guidelines for SPDs within the municipality. In terms of participation, developers were allowed to suggest a free form proposal which would be judged by the municipality. In terms of financial participation there was an aim for 50% participation, not necessarily including ownership.

### ***Zomereiken's participation approach***

#### ***Project participation***

In shaping the participation approach the developers used a 250 meter radius from the project location. Stakeholders within or bordering this radius were considered as directly impacted and considered as the relevant stakeholder group to consult during the project design. Including a farmer's business and a local sports association. The set-up for Zomereiken consisted of three series of stakeholder meetings. The first two series were directed mainly at directly impacted stakeholders (a total of 20). The third series of meetings aimed at informing both the directly impacted stakeholders as well as the public as a whole.

The first round of meetings, three in total, aimed at informing the directly impacted citizens and finding their main concerns that would be encompassed in the first draft project design. Feedback referred to concerns regarding the change in the currently open landscape. Secondly, all stakeholders mentioned that they would rather not have the SPD at all.

The second round of meetings, two in total, aimed at consulting citizens for the first draft of the project design. In addition, the developers forwarded all the information they had gathered and the studies they conducted for the permit application. During the second round of meetings citizens expressed concerns about the sparse presence of the municipality and the necessity of SPDs in general. Also suggesting that both the developers and municipalities should use a more individual and personal approach (Agem, 19-10-2020).

The third round of meetings are split into two separate online sessions. Following the Covid-19 pandemic, the developers followed the municipal policy and decided to hold the meetings online. Many visitors consider this alternative approach to be insufficient and inadequate as



proper dialogue and discussion is only limitedly possible (Agem, 19-10-2020). The third round of meetings were mainly informative. With regard to the project design, the consultation of directly impacted citizens was considered the most relevant. The emphasis for the third round would therefore be mostly on informing. Consultation from the broader public was, however, also considered and citizens were invited to share their input.

Furthermore, citizens were informed directly through personal letters and emails. To reach the broader public Agem also made use of paid social media services, local and more regional newspapers and their website. In order to consult citizens they organised the different consultation sessions but were also available through mail/phone. In addition, the developers used questionnaires and actively approached other organisations which were considered relevant for the project. Directly impacted citizens were asked after the first and second round of meetings whether they should contact any additional stakeholders or if any individuals were currently left out of the participation dialogue (Agem, 19-10-2020).

The following modes of participation were applied during the process participation approach of Agem:

	<b>Procedural participation</b>	
	<b>Developer approach</b>	<b>Municipal approach</b>
<b>Informative modes of participation</b>	<ul style="list-style-type: none"> <li>- Personal letter/mail invitations to directly impacted households (20) and organisations</li> <li>- Social media invitations for the informative public meeting</li> <li>- Announcement on Agem web page</li> <li>- Invitations through public and regional newspaper</li> <li>- Providing an anonymous questionnaire which stakeholders could leave after the third round of meetings</li> </ul>	<ul style="list-style-type: none"> <li>- Invitation through social media, local newspaper and municipal website</li> </ul>
<b>Consultation modes of participation</b>	<ul style="list-style-type: none"> <li>- 3 local discussion meetings with more directly impacted citizens</li> <li>- 2 more plenary sketching sessions with directly impacted citizens</li> <li>- 2 more public meetings mainly focussing on informing (March/July) nearing final project design</li> <li>- Individual conversations with various relevant organisations</li> </ul>	<ul style="list-style-type: none"> <li>- Public meeting per subarea (3 total) to consult and inform citizens per sub area of the municipality</li> <li>- Formal public consultations periods for policy and permit application</li> </ul>
<b>Partnership mode of participation</b>	<ul style="list-style-type: none"> <li>- Establishing project cooperative backed by Agem to transition to 50% local ownership and therefore decision making power</li> </ul>	

	<b>Financial participation</b>
<b>Local ownership</b>	<ul style="list-style-type: none"> <li>- Sale of shares of the newly established project cooperative (with priority based on citizens of Oost-Gelre) in order to reach 50% local ownership</li> </ul>
<b>Public fund</b>	<ul style="list-style-type: none"> <li>- Depending on the outcome of the share structure and it's interest excess might be contributed to a public fund (yet t.b.d.)</li> </ul>
<b>Local arrangement</b>	<ul style="list-style-type: none"> <li>- Agem offers to supply the locally produced RE for a market conform price to citizens</li> </ul>

*Table 8. Overview participation approach case 3. Zomereiken*

### *Financial participation*

The ambitions of Agem as a regional energy cooperative led to the agreement with Sunvest for 50% of the shares which are through means of a new cooperative, part of Agem, to relocate the shares to the people of Oost-Gelre. In terms of additional financial participation there are no clear agreements yet.

Shares are likely to be sold at a price of 500 euro per piece. This can be considered a high amount, which suggests that less wealthy stakeholders are likely to participate less in this development. In an aim to reach a more fair distribution, however, citizens that hold shares and live closer to the development are offered a higher interest on their shares than individuals that live further away. Through this system local ownership is stimulated more directly and it becomes more interesting for citizens to become part of the development.

For less wealthy stakeholders Agem has also considered the realisation of a public fund, which will not directly receive funds from the project's cash flow. Depending on the revenue, interest rates might be capped and any excess could be donated to the fund to support public amenities or any other charity the locals suggest (PC, Agem, 01-07-2021). The final financial structure, the revenues and cost of the shares are to be determined later when the developers are working towards crowdfunding and financial close.

As Agem is also an energy supplier, they offer the locally produced RE for a market-conform price. In this sense they also provide the option to people and businesses to produce as well as consume locally generated RE.

### 4.3.2. Solar Park Zomereiken, through the lens of energy justice

#### **Procedural justice**

##### *Decision making*

In terms of the decisions that are made during the process some aspects stand out. In the meetings in March 2020 (Agem, 19-10-2020) citizens highlight the absence of the municipality during the meetings. Additionally, there is some disagreement about the necessity of solar parks. This suggests that the policy procedure to reach the municipal ambitions remains unclear to the participants. Adding to this, citizens state that several other solar parks are being developed close by, both in Oost-Gelre as well as neighbouring municipalities. They express that they feel a lack of coordination between the municipalities.

The municipality chose to take a strong facilitating role during the process in which initiative would completely be with the developers. As the project would enter the spatial planning procedures the municipality would pick things up and decide whether or not the developer followed a positive procedure. *"They made it clear each time: 'It's your party and we'll pick things up as you apply for a permit'. They offered to explain at a public meeting what the policy looks like, so we did that during the online meeting, but besides that we did not see them"* (PC, Agem, 01-07-2021).

During the third round of participation meetings citizens again expressed concerns of other projects that were developed close by. Shortly before the third round of meetings a petition had been submitted to the municipality. There appear to be concerns regarding the amount and concentration of SPDs in or closely near the municipality. Zomereiken is based on

current policy and the municipality states that the RES should lead to a better coordination within regions (Agem, 19-10-2020).

#### *Stakeholder consultation & information sharing*

When reviewing the consultation of stakeholders during the process we can see the developers taking several means to ensure that they are aware of the different concerns of citizens. Through three different setups during the process the developers aim to engage in a more local setting and a more plenary setting with the public. The aim during these sessions shifts from a consultancy and informative setting towards a more informative setting nearing the end (Agem, 19-10-2020). Citizens were actively approached in the local vicinity of the park's location. The broader public was invited to engage in the third round of sessions. The participation rapport offers a detailed recount of the more positive and negative responses during the participation sessions (Agem, 19-10-2020). It shows that the developers aimed to address all questions and remarks made by stakeholders. There are some aspects that display the willingness of the developers to do so properly:

During the second round of consultation meetings the directly impacted stakeholders suggested an alternative design for the project in which roughly half the project would be allocated to the other side of the surrounding road (Agem, 19-10-2020). As a response the developers contacted the municipality to see if changing the initially proposed location during the procurement was allowed. Under some conditions this could be done, however after looking further into the proposed plan the developers found some additional obstructions. The shift would move the project closer to other directly impacted households who had a similar negative perspective of a SPD close by. Secondly, the land plot was considered to be less efficient for solar energy production and the cultural value of the first design would be lost as it would no longer encompass the project location which was an important aspect for the municipality to comply with Zomereiken's project proposal (PC, Agem, 01-07-2021)

In the third round of public meetings where not only directed citizens were invited there are a few critical notes on citizen consultation and fair process. As a result of the Covid-19 pandemic the meetings were held online. Which meant that the common discussion between presenters and the public was limited to a chatbox. Citizens stated that they felt unheard and could not properly engage with the developer through this approach (Agem, 19-10-2020).

#### **Distributional justice**

As a regional energy cooperative, Agem cooperates only with developers that propose a fair 50/50 ownership division. Development with Agem will enable citizens to financially participate and reap the interest on their investment. Agem aims to take away as much of the potential risk (costs) that comes with the investment before the crowdfunding opens up (PC, Agem, 01-07-2021). However, Agem also states that: *"It costs us a lot of time and effort to explain that this is the way to maximize the profits for them"* (PC, Agem, 01-07-2021).

Agem also realises that citizens without the means to invest will not be able to participate in this aspect of the development. As a response, however, it is suggested that the financial participation will be more thoroughly structured after getting a permit granted. Financial

agreements and terms can then be composed, which could state, for example, that there is a maximum revenue per share and if revenue were to exceed it could contribute to a public fund to benefit the community as a whole (PC, Agem, 01-07-2021).

Agem also states that in the current phase of the project it is difficult to make citizens see the more positive perspective that this project can bring. Stakeholders are currently focusing on disrupting the development and preventing it's construction in their close vicinity. As a result, the idea of ownership is not on the citizens' agenda. *"People are mostly still in the first phase of opposing, trying to stop, which makes it difficult to share the message of financial participation"* (PC, Agem, 01-07-2021).

During the discussions with directly impacted stakeholders, the citizens expressed that they expected the developers and municipality to come up with some form of compensation which covered any losses. The developers aimed to address this by having a neutral third party analysing the potential financial loss of value as a result of the development. The outcomes showed limited risks, which were not in line with the expectations of stakeholders. The developers then suggested a compensation scheme which substantially extended beyond the risks analysis outcomes, while also allocating means to households that according to the analysis were not legally subject to compensation. Citizens did not agree with the division key and wanted to invite another independent advisor to adjust the proposition to which the developers agreed (Agem, 19-10-2020).

The developers' terms for initiating the so-called '*Noaberpremie*' were that stakeholders would not be permitted to file formal objections which would delay the permit application process after the spatial planning procedure was started. As this was a private agreement between developer and individual household there was a secrecy agreement which led to a quick politicisation of the subject where the idea has formed that citizens were bribed and not allowed to complain anymore, which turned out to not be true. This delayed the project unnecessarily (PC, Gemeente Oost-Gelre, 20-07-2021). This shows that a lack of transparency during the project quickly escalated into mistrust and misconceptions, which in fact is a more generous compensation than the legal procedure would have resulted in.

## 4.4 Solar park Vluchtoord II (Uden)

### 4.4.1 The project and its participation approach



Figure 9. Solar park Vluchtoord II (Uden)

Stakeholder	Role	Goal
TPSolar	RE developer Project initiator	Development and exploitation of ecological solar parks
Municipality of Uden	Facilitating SPDs	Realising energy targets

Table 9. Overview of stakeholder interviews case 4. Vluchtoord II

### Case introduction & Policy development

Solar park Vluchtoord II is an initiative by TPsolar of around 9 ha in the municipality of Uden (soon to merge with the municipality of Landerd to rename as Maashorst), which will produce enough electrical power to support 2600 households. The land is currently being used for agriculture. The project was initiated as a co-project with the landowner who has proposed to continue agricultural production under the rows of solar panels. TPsolar is a solar energy developer with experience in the development, construction and maintenance of solar energy production facilities, focussing specifically on land-based and water-based solar energy. There were no significant oppositions or co-development parties involved in this development, which is significant in itself.

In terms of relevant policy for the case, there were no guidelines besides a general ambition document for the public environment (Gemeente Uden, 2015). This makes Vluchtoord II an interesting case. The coalition agreement for the period 2018-2022 however, did agree on several aspects related to SPDs. The ambition for the built environment to become energy neutral by 2035 and the required target to reach at least 50% energy neutrality by 2025 in the sustainability agenda, were adopted by the coalition. This was translated to a 22 MWh production in large scale RE production. In addition to this, it was included that land-based RE productions would not be allowed on locations currently in use for agriculture. However, this project initiative has been framed as a pilot project which has led to the fact that the municipality led TP solar apply for a permit. Multi-purpose land use is currently a hot topic in the solar market as municipalities are looking to increase public value on the same land plots. Examples are known of herding sheep or other animals under solar panels, recreation and education. Besides these examples, agri-PV is recently being introduced, a form of agriculture under the solar panel construction.

The municipality of Uden currently has two other SPD of which one has been realised and the latter is currently being realised. The developers of Vluchtoord II have recently been granted a permit and are now working on the SDE+ subsidy. It is significant to note that the other two solar parks are also developed by TP solar.

Recently, the municipality has established a policy for large-scale RE production in line with the developments of the RES. The RES has clear guidelines on SPDs which also encompasses participation, specifically also local ownership. With regard to Vluchtoord II, process participation had already been established in a note on participation and was expected by the municipal council at permit application. Financial participation was much less so embedded in policy at the time when Vluchtoord II was initiated. *"We want to give local ownership a place, however the municipal decision making body was not that far yet. There were discussions on how TP solar would encompass financial participation. But that did not go as far as the stance we currently have for new initiatives"* (PC, Gemeente Uden, 20-07-2021).

## **Vluchtoord II's participation approach**

### *Project participation*

TP solar's participation approach started around the time they sent their project proposal to the municipality. Their approach always involves engaging with the directly impacted citizens. Surrounding the project location within an area of around 300 meters. These are usually individual conversations in which the developer actively reaches out to individual stakeholders, showing the project location and asking their preferences with regard to project design and concerns. These stakeholders are directly impacted citizens and other stakeholders that are part of organisations such as governmental bodies. The choice for these individual conversations is twofold.

First of all it gives stakeholders that are uncomfortable in group settings, the chance to express their individual concerns and suggestions that they might otherwise speak differently or not make their concerns known to the developer. Individual conversations are a better way to get to the root of why a person might oppose a development. The second reason is that: *"Directly impacted citizens are frankly more important than people that live further*

away" (PC, TP solar, 15-07-2021). By organising these individual meetings it is possible to address strong objections against the SPD beforehand before stepping towards the larger public.

TP solar added that participation dialogues with individuals are always project dependent. There is no set formula and the right participation approach depends on: *"It depends on who the people are, what the municipality did beforehand, even that cannot be the determining factor. It is always different, who is the public sphere, how is it put together and if someone really is against then it does not matter what you do, you will not convince him."* (PC, TP solar, 15-07-2021). Some individuals require only one meeting, after which they say it is all clear and fine, just asking to be informed on interesting developments.

#### *Informing the public*

Following preliminary design suggestions, TP solar organised a first public meeting in which all directly impacted stakeholders (a total of 33 addresses) within a 500 meter radius were invited. The aim of the meeting was to inform stakeholders of the developments, share the first ideas for the project design and answer questions in a public setting. During the meeting individuals were consulted on the project design. Individuals were also invited to reach out to TP solar at a later stage after the public meeting. A short report of the meeting was made public, which reported on the information shared and questions asked during the meeting. The concerns covered the need for using agricultural land for SPDs and externalities that the SPD might bring forth (TP solar, 09-2020). Only a total of 3 addresses were represented during the public meeting.

While TP solar admits this is a low turn up, they also saw a positive side as there was no need for a general presentation and individuals could be approached personally. Adequate time could be offered to the participants that had shown up with questions (PC, TP solar, 15-07-2021). The low turn up was interpreted as the first reason to consider their participation approach to be positive. TP solar suggested that they had already addressed individual citizens properly in the individual meeting, leaving nothing unclear or any unaddressed concerns (PC, TP solar, 15-07-2021). Secondly, as this was not the first solar park by TP solar in Uden and Vluchtoord I is next to this project location, citizens might have already been through a similar participation process. It is unfortunately unclear whether individuals have a positive perspective on TP solar's way of approaching SPDs or whether they feel there is nothing worthwhile to participate on (TP solar, 09-2020). Lastly, the location for the SPD is mainly surrounded by business holders, which in terms of impact on daily livelihood is considered less than for households living there (TP solar, 09-2020).

Following further adjustments on the project's design, TP solar organised a second public meeting for which the same 33 addresses were invited. For this meeting however, TP solar also posted a public message in a local newspaper in which Uden as a whole was invited to sign up for the public meeting. The emphasis of this meeting was on informing the public as a whole (TP solar, 09-2020). As with the first meeting, the second was also represented by three individual households of the 33 invited. From the total public of Uden which was also invited as a whole no stakeholders showed up. A possible reason named for this was that the citizens of Uden already experienced such an informative meeting earlier during Vluchtoord I around one year before (TP solar, 09-2020).



### *Financial participation*

In arranging the financial participation, TPSolar prepared four options which were explored during participation sessions (TPSolar, 08-2020). The primary option is a bond structure in which individuals will be invited to invest in the solar park through bonds in which this will gain revenue based on their investment. Citizens of Uden would then likely be the first offered the option to invest in the SPD. Secondly, TPSolar aims to work together with local contractors for the construction and maintenance of the solar park in order to create an impulse in local business. The multi-purpose land use programme is also expected to contribute to local employment. Through the multifunctional exploitation of Agri-PV there is likely to be another demand for workers.

Thirdly, TPSolar aims to better connect between locally produced and consumed RE through a third party platform or energy supplying company that supports these specific structures. This is also believed to work as a stimulant for the last arrangement in which TPSolar supports the increase of roof-based solar installations on individual households.

The following modes of participation were applied during the process participation approach of TP solar:

<b>Procedural participation</b>		
	<b>Developer approach</b>	<b>Municipal approach</b>
<b>Informative modes of participation</b>	<ul style="list-style-type: none"> <li>- Web page on TP solar website</li> <li>- Letters for directly impacted citizens</li> <li>- Local newspaper advert</li> <li>- Reports on the public meetings</li> </ul>	<ul style="list-style-type: none"> <li>- Invitation through social media, local newspaper and municipal website</li> </ul>
<b>Consultation modes of participation</b>	<ul style="list-style-type: none"> <li>- Two open sessions addressing two stakeholder groups. The first addressing directly impacted citizens (33 in total). The second addressing both directly impacted citizens (direct letter) as well as Citizens of Uden (advert in local newspaper)</li> <li>- Private meetings with relevant organisations</li> <li>- Private meetings with directly impacted citizens</li> </ul>	<ul style="list-style-type: none"> <li>- Public meeting per subarea to consult and inform citizens per sub area of the municipality</li> <li>- Formal public consultations periods for policy and permit application</li> </ul>
<b>Partnership mode of participation</b>	<ul style="list-style-type: none"> <li>- Sharing the project land with the landowner who is planning to continue cultivating the land under solar panels (Only one individual though!)</li> </ul>	

<b>Financial participation</b>	
	<i>Currently still undecided what form financial participation will be chosen TP solar offers the following four possible arrangements:</i>
<b>Financial participation</b>	<ul style="list-style-type: none"> <li>- Citizens are invited to invest in a bond structure tied to the solar park. Through this they can join in the revenue of the solar park. No actual ownership included.</li> </ul>
<b>Local arrangement</b>	<ul style="list-style-type: none"> <li>- Consumer deal for RE produced with the solar park</li> <li>- Stimulating programme for small scale roof-based solar installation</li> <li>- Financial support for the local skiing slope</li> </ul>

Table 10. Overview participation approach case 4 Vluchtoord II

#### 4.4.2. Solar Park Vluchtoord II, through the lens of energy justice

##### **Procedural justice**

###### *Decision making*

In terms of decision making, something interesting happened in this case. The municipality of Uden stated in policy that they were not allowing any SPDs on agricultural land. However TP solar, by proposing Agri-PV, managed to find cooperation with the municipality to work on the project. The municipal ambitions were so large that they would eventually have to consider additional SPDs (Udens Weekblad, 2020). The municipality framed Vluchtoord II as a pilot, because of its novel approach of combining agriculture with RE production, in this sense giving it special status. The decision, however, was highly politicized as the original agreement with the agricultural sector was to not allow SPDs on agricultural land. As a result of TP solar's ambition to realise Agri-PV on Vluchtoord II the circumstances were considered different as the land would still be used agriculturally. The alderman was under the impression that there was a need for additional RE on land-based in which agricultural land could play a role (PC, Gemeente Uden, 20-07-2021). Therefore, the project was framed as a pilot and allowed to start the SP procedure for permit application.

As this pilot is approved by the municipality, there is no clear policy on SPDs. In this sense citizens have not had the chance to exert influence on the decision making process with regard to scale, location, landscaping or any other aspect. Through the spatial procedures of a permit application, TP solar had to involve stakeholders in the project design process (PC, Gemeente Uden, 20-07-2021). This process, however, revolves around designing the project boundaries and details (PC, TP solar, 15-07-2021). The question whether or not SPDs in general are something fit for the municipality according to citizens did not play a role in this development.

In the discussions with TP solar the municipality aimed to embed local ownership to some extent, currently crystallised, as a bond structure the municipality now strives for 50% local ownership through partnerships with cooperatives and in this sense trying to more closely involve citizens in SPDs within the municipality. However, when Vluchtoord II was introduced, policy development was not finished yet: *"We want to give local ownership a place, however the municipal decision making body was not that far yet. There were discussions on how TP solar would encompass financial participation. But that did not go as far as the stance we currently have for new initiatives"* (PC, Gemeente Uden, 20-07-2021).

As this project was not the result of a public procurement procedure, the municipality suggested to TP solar that they should first engage with the public to see if there is any public acceptance or support for this project. *"In order to show whether or not there is public acceptance. In what measure. Sometimes you hear that 'Citizens are being spoken with', but at the same time the dialogue is between the developer and the municipality so you are 1-0 behind"* (PC, Gemeente Uden, 20-07-2021).

In this sense, the municipality provided the public with a way of showing their feedback before the municipality would lend their support to work out a project proposal to the council. This feedback and the initial plan design are then objectively judged by civil servants to see if there is enough support for the plan to work towards permit application. *"It is the municipal role to properly notify the public of the energy transition, the task at hand and the way the municipality will realise it."* (PC, Gemeente Uden, 20-07-2021).

Eventually, as the project is subject to a permit application the decisions making eventually becomes politicized as the municipal council has the final say with regard to permit grant: *“Yes, then it might turn political. And it will simply depend on what stance the different political parties take. There is more than 1000ha of space potential for SPD and we need to fill approximately 50 ha so if the resistance is significant we will look for other locations ”*(PC, Gemeente Uden, 20-07-2021).

#### *Consultation and information sharing*

TPsolar highlighted that during participatory meetings (not necessarily in Uden alone), the discussion in public settings sometimes shifted towards the need for SPDs in general. In which, citizens stated that roof-based solutions should have priority. They emphasize that this is the municipal role and municipal policy. Based on their experience with this feedback they have encompassed two preferences in their participatory approaches. The first is that whenever they hold a public meeting, they aim to always ensure there is a civil servant present who can address citizens' concerns regarding these aspects. Secondly, they prefer to host public meetings in smaller group sessions moving around in topics. This works two ways as they have experienced that in smaller settings, citizens can better be consulted on various aspects of the project design and any individuals opposing the SPD will be unable to claim a general meeting by loudly posing these generic questions aimed at the role of the municipality (PC, TPsolar, 15-07-2021).

Resistance during the first phase of development of Vluchtoord II was considered to be very minimal by TPsolar, as suggested by the participation report, besides the badger workgroup there was no clear opposition against the project (TPsolar, 09-2020). An interesting notion here, is the low response from the addresses that were actively invited to participate in the different rounds of consultancy. The case suggests TPsolar provided ample information regarding the development and created several means for any potential stakeholder to reach out publicly or individually. TPsolar suggests that concerned citizens got their insights addressed in any of the earlier developments by TPsolar (PC, TPsolar, 15-07-2021). Adding that the already physical presence of one of their parks made citizens get used to what an SPD actually is and how it impacts the environment (PC, TPsolar, 15-07-2021). This suggests that the notion of technology acceptance (Heras-Saizarbitoria et al. 2011) with regard to SPD or RE in general might also be relevant for cases in the Netherlands. The currently politicized resistance against solar parks might be subject to a temporary state of transition. Resistance against SPDs would in this sense diminish as the role of them within our landscapes becomes a more common understanding.

The municipality suggests that due to the features of the location, there is simply little concern of citizens. There are hardly any citizens living close, and the few addresses that surround the location are mainly businesses which are hardly affected by the SPD (PC, Gemeente Uden, 20-07-2021). There can also be found no negative framing of the SPD in the media. No reports of resistance surrounding the development of Vluchtoord II.

## **Distributive justice**

In terms of benefits, Vluchtoord II is considered to offer a distinct contribution to the local society. The project design of Agri-PV as multi-functional land use is considered to have a positive impact on the local area, as it contributes to local energy requirements as well as remaining a source of food production. Citizens will most likely also be invited to co-finance the park together with TP solar, through a system of bonds they will be able to gain personal revenue based on their investment. There is, however, no degree of local ownership and decision making power tied to the financial investments. Lastly, TP solar is considering to financially aid the next door business, which hosts a ski-slope. In this way also contributing directly to the local society, without individuals having to invest. RE produced by the SPD is likely to be offered directly to the local addresses through a third party energy provider. Possibly at a reduced tariff for directly impacted citizens. In short, through various means, TP solar aims to contribute to the local society, both with personal investment as well as some arrangements that do not require personal investment.

The municipality expressed that they would have preferred to embed local ownership more in the project design as part of the benefits (*PC, Gemeente Uden, 20-07-2021*). Another issue they are trying to address, which relates to their ambition to better embed local ownership, is the lack of energy cooperatives or interested parties that might be willing to exploit a SPD. By informing the public on energy initiatives and what roles citizens can play they aim to facilitate the establishment of such groups. However, this was too early for the scope of Vluchtoord II (*PC, Gemeente Uden, 20-07-2021*).

## 5. Cross case analysis

This chapter compares the findings in the cases studied with one another. This chapter addresses the sub-questions as proposed in chapter 1.2. Chapter 5.1 discusses the main modes of participation and the allocation of outcomes. Chapter 5.2 discusses the main concerns of stakeholders during the developments and how participation played a role in addressing these.

### 5.1 Developer approaches to the concept of participation

Looking at the different approaches developers take in the cases studied, one can find many similarities. Participation is split into the twofold of process and financial participation, which both show relevant modes of concern for citizens in terms of meaningful participation. On the one hand, concerns regarding involvement and decision making and on the other hand the outcomes of the project both individual as well as group based are object of discussion.

The following paragraphs discuss the main modes of the participation strategies that developers applied during the cases studied. Furthermore, they describe the differences in considerations and outcomes that developers make. The aim of the comparison between cases below (figure 10.) is not to judge the different participation approaches, but to consider how they relate to the perception of meaningful participation and the developers considerations for structuring their approach in the way that they have. The different parts of categories of the strategies that they have chosen are weighted on the modes that were selected by developers and how well it fitted with needs of the stakeholders. Green refers to a good fit, orange to an acceptable fit and red suggests that the developer must improve on working towards meaningful participation.

	Bankhoef	Berg en Dal	Zomereiken	Vluchtoord II
<b>Informing citizens</b> (passive, active, multiple means)				
<b>Stakeholder consultation</b> (passive, active, multiple means)				
<b>Citizen control</b> (following citizen initiatives, partnership, stakeholder decision making)				
<b>Local arrangement</b> (Local fund, additional arrangement, local compensation)				
<b>Financial partnership</b> (community based, bonds, shares)				

Figure 10. Impression on the different participation strategies and their impact on meaningful participation

#### *A focus on procedural participation - the common modes*

When developers start a new project, they will have an agreement with a landowner. Some developers might initiate their participation approach before the municipality has allowed them to work towards permit application, as was the case with Bankhoef. The majority, however, will not do so as there might be up to dozens of project applications of which only a limited amount will be chosen through a municipal guideline and procurement process. Municipalities seemed also hesitant to let developers start this early with their participation project because of this. The majority of project proposals will not be accepted by the municipality which would unnecessarily lead to responses from citizens that might eventually be for nothing. After their project has been selected, the first participation approach is to contact citizens (or stakeholders) that live directly or closely nearby the project location. Their concerns are considered the most valid by the developers spoken in all cases.

At this point, developers often start working on a participation plan and organise a public meeting in order to inform the public as a whole on the development. In many cases the second part of this public meeting will invite citizens to consult on the project design (usually

mainly with local citizens around the project location i.e. max 200-300 meters). The project location is explained and the various preliminary ideas on project design such as possible multi land-use methods and landscaping features such as cultural heritage. Around this time developers usually air a project website as a general platform to share any updates and information regarding the development. Developers usually invite stakeholders for various events through different means of information sharing, such as messages through different media channels such as local newspapers, local platforms, municipal platforms and door to door letters. Directly impacted citizens are usually approached more personally and directly. Developers might also inquire on the way in which citizens would be interested to participate. Explaining the various means of financial participation and then working out through process participation what forms of financial participation are eventually to be established (based on accepted project initiative as accepted by the municipality).

Following this first public meeting, stakeholders are invited through various channels to reach out with input and questions. The developer actively reaches out to various organisations that can provide relevant input on the project design or might in any way be considered a stakeholder. The developer tends to have a pre-planned approach to process participation, but might have to invest more time into specific circumstances or opposition groups. One example that reflects this is the example from the solar park Bankhoef where the elderly had to be approached more personally instead of digitally. Similarly, whenever an opposition formalizes for whatever reason it is the developer's role to engage in a discussion and see how and in what way agreements can be found. In some cases the developer will initiate a working group or consultancy group with (preferably) key stakeholders. To have a more direct line of discussion and consultancy for various aspects during the development. These cases show examples that focus on the procedural aspect in which the stakeholders function as a voice for the community to quickly highlight concerns that arise or suggest, for instance organising a public meeting to address specific topics. In another case the group would primarily focus on financial participation. To work out what arrangements would be constructed for this park, whom should it benefit or what should it be used for.

In some cases the developer might organise additional consultation sessions with directly impacted citizens to work more closely on detailed aspects of the first project design. The first project design will be the result in which the developers aim to combine all the insights and concerns highlighted by citizens combined with a design for landscaping often in cooperation with a landscape architect.

Once the first project design has been finished, there usually is a second public meeting in which citizens are once again informed on the SPD and the current stage it is in. Then citizens are invited to respond to the project design as it stands then. Once the project design has been drawn and made 'graphical', citizens will have different insight or can reply in a more detailed manner on for instance long sights that might get interrupted or pathways that need to remain open and various other concerns. This first draft is therefore likely to lead to additional changes and reactions. Based on the reactions and the sense from the public a developer might then organise a last public session before initiative SP procedure for permit application.



#### *A focus on financial participation - the modes of distribution*

Financial participation is often, at least partially, preconstructed in the project proposal offered to the municipality. In this sense, there is only a limited requirement to discuss how citizens can participate. The larger debate will in most cases regard who the various financial arrangements would benefit and who is allowed to participate. For instance, a developer suggests community benefits like a public fund, a fund with money will be made available on a yearly basis depending on RE production. Public funds are currently considered appropriate ways to benefit the local society as a whole because it steadily generates financial benefits, which can be flexibly allocated according to the needs of the locals. It then needs to be determined which party allocated how the funds are to contribute to the local society. In all cases studied, however, the developer retreats from this responsibility and governance over the fund is shifted towards another entity, such as the municipality or the consultancy group or a local citizen group.

With regard to local ownership, project proposals often determine whether or not financial participation will also cover bonds or shares (thus local ownership and decisions making power). The debate here will also include who is considered to be the 'local society', in other words who is allowed to invest. The policy process and municipal decision making largely influence, prior to project development, how some financial aspects are part of a project and how they are structured (I.E. bonds/shares). For directly impacted citizens compensation measures are legally in place if there is a considered loss of value on property. The developer of the case SPD Zomereiken aimed to overcompensate directly impacted stakeholders, providing substantially better compensation than the regular legal process would. Even though the intention was good, the outcome resulted in blurred lines between compensation and bribery (earlier defined by Kluskens et al. (2019)).

Even though specific arrangements are open for debate and flexible during project development, the discussion regarding financial participation is often not consolidated and emphasised before the permit grant. Which can be considered logical as before a SPD has been granted a permit financial participation and financing the solar park is not the main concern of any stakeholder involved. It is not until the permit is granted that a SPD is in a stage that it is likely to be developed and going into the finance phase in which it will depend on being granted SDE+ subsidy and reaching financial investment targets. This does, however, suggest that the debate which structures local ownership should be more emphasised in the policy development process.

Arrangements focusing on community benefits on the other hand, can often still be discussed and altered depending on the consultation of citizens. The cases suggest, however, that the main concerns of citizens that are concerning themselves with the development focus on either opposing the SPD or (individual) compensation measures.

The following graph depicts the general timeline that a SPD runs through, not considering any setback such as formal complaints (delaying the process by up to 6 months), having to go for another round of permit application or any other issue regarding spatial planning procedures or opposition groups etc.

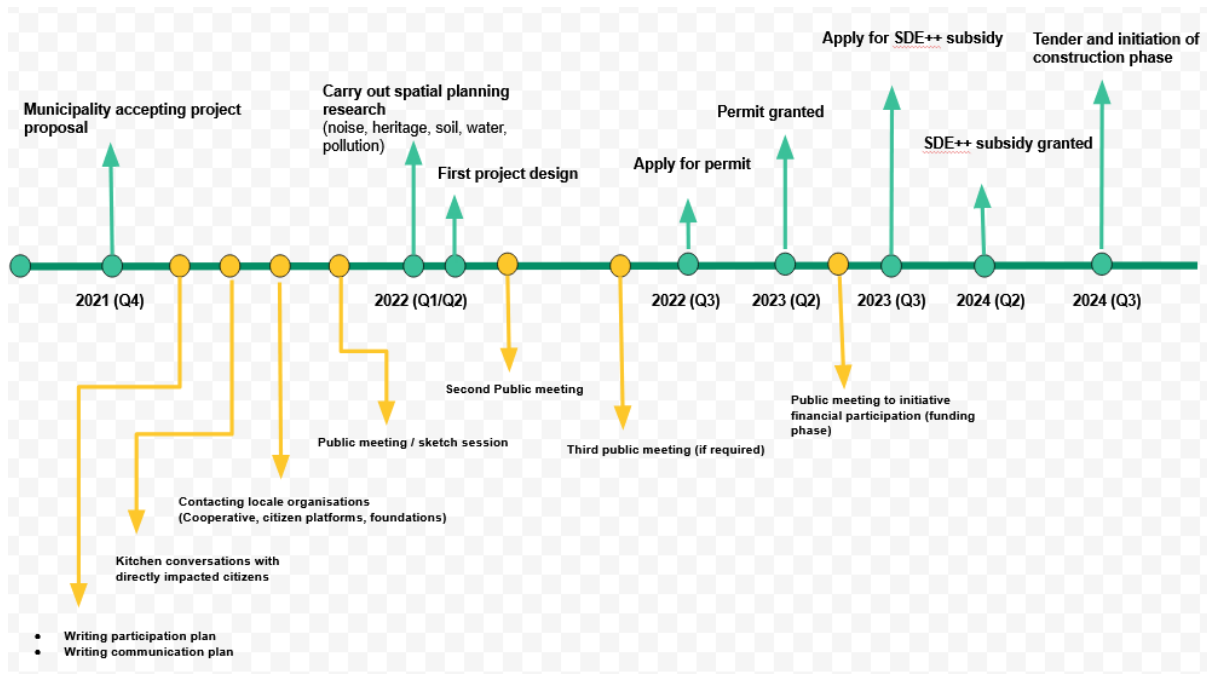


Figure 11. Global timeline SPD with generic modes of participation (personal design)

## 5.2 A comparison between the cases through the tenets of EJF

In this paragraph, a generalisation is made between the findings of the different cases through the tenets of energy justice. The paragraph starts off with a review of municipal policy making with regard to SPDs. After which, procedural and distributional justice between the different cases are discussed.

### 5.2.1. EJF on participation during policy making

At the political and policy level of procedural justice, there seems to be a strong learning curve in RE projects. Projects are being framed by municipalities as pilots in order to learn and eventually reach the large energy targets that are relevant in the energy transition discussion. Participation and citizen involvement appears to be better embedded within new policy guidelines for SPDs. As a result of this, developers have adopted it more carefully in their project approaches. Whether out of necessity or to strive for a better project is unclear. However, it does highlight and stress the decisive role that the municipal council plays in decision making. SPD Berg en Dal really highlights the politicized nature of these developments where a citizen group is aiming to lobby directly at the municipal council level. This does not come as a surprise as decision making regarding project design is done by developers alone. The developers design their project on information and consultancy received by all stakeholders, however, actual decision making lies with them.

It is apparent that final decision making with regard to permit grants and policy lies with the municipal council. Citizens are involved by the developers during their project development. Both as the result of municipal guidelines, but also from personal concerns that involving citizens creates a more positive procedure and outcome. Final decision making, however, is done by the municipal council with regard to this stage of a development.

Citizens are also asked to consult and provide information and preferences during the policy development stage prior to the project development stage. They are also invited to provide comments and insights and draft policy proposals, which directly impact the guidelines of all SPD plans. The fact is however, that most citizens do not become active in this early stage. Citizens oversee the relevance of the SPD policy in a later stage when specific projects are proposed. It is mostly individuals already related to the field of RE development or specific groups of society that show up on these feedback sessions. Citizens that form an opposition become active after specific projects are initiated. To some extent, this could be argued as NIMBYism, however, practise also shows that citizens were not involved up until that point. Therefore you could also argue that the participation process might not have been representative or inclusive enough. Or, policy might not fit the actual outcome of the consultation process as citizens in Berg en Dal suggest (PC, DE Berg en Dal, 26-09-2021). As a result, SPD guidelines and proposed projects do not fit citizens expectations and resistance is bound to occur. Civil servants, as well as developers, however state that even if they increase the policy consultancy period and steps taken it is unlikely that more or different groups of citizens become active. Or the policy development process would become too extensive.

As the cases have shown, there is often a significant process going on before a solar park developer is allowed to start working on its proposed project. Following, and sometimes already preceding the RES dialogues, municipalities are establishing policy with regard to

RE and land based solar parks in specific. These policy documents to a large extent determine guidelines for SPDs relating to various aspects encompassing at least landscape design, ecology and participation. These policy development trajectories define where solar park developments are going to be allowed by municipalities before specific projects are proposed. The development of policy before accepting one or several project proposals offers opportunities in terms of just and fair procedure in terms of citizen involvement and acceptance but also poses risks.

Citizens are invited to participate during policy development, however, the cases show that citizen participation is limited for various reasons. The fact is that this point in time, where policy is developed, is largely determining where projects are allowed to be initiated. The later participation process opened up by the developer does not go into whether or not this location should be possible because that discussion has already passed during the policy development stage. This poses a problem as later concerns regarding a specific project in terms of a specific project location are easily dismissed as being NIMBYism.

Difficulty arises when civil servants want to include a broader representation during these participatory activities that form one of the bases for policy development. Citizens are difficult to mobilize at this point in time where RE seems relatively far away and not their business. Citizens might also in general not feel the need to participate and simply apply formal views when the policy document draft is open for public responses before being judged in the municipal council. In terms of consulting citizens and information sharing, citizens feel passed by when they start getting interested and a project proposal has already been accepted by the municipality. The difficulty here is how to include citizens that are not occupied with the energy transition. You cannot force citizens to participate.

### 5.2.2. Procedural justice

#### **Decision making**

##### *Involving stakeholders in project development*

When discussing decision making in terms of energy justice, these cases show some clear examples of the willingness of some developers to take a step back from the clear role of initiator and decision maker during the project design phase. We see developers sitting down with stakeholders and considering their concerns for the final plan designs. They might consider it time saving as it would reduce the number of formal complaints on permit applications. But also the quality of the project is considered to improve. Even though citizens have always had the formal right to object against permit applications, the idea of participation has been more solidly grounded in laws and regulation through the environmental act as well as agreements and policy such as the climate agreement and new local policy on RE production.

Secondly, citizens that are able to exert decisive action with regard to their locally used and produced RE can become a game changer in the near future where energy and consumption could be grounded more locally. In keeping equal shares in projects, citizens remain at least partially in control of how energy is produced and under which conditions. But perhaps even more critical here is that when conditions have to be adjusted, which is likely to happen, as a result of a change in the way we use energy, citizens are at least partially in control of what is to be the most just way of the adjustment to go. If these new

sources for RE would all fully be in the hands of privatised parties reaching agreements necessary for change would evidently be costly and complex to reach.

An important matter to realise here, however, is that even though citizens are empowered as decision makers through cooperatives such as ECL, only certain groups are interested in and investing in shares of these RE sources. It is thus important to consider that even if the decision maker with regard to energy production changes to a division of privately owned and publicly owned, it is still not a fair representation of the whole of society. It is likely to represent the decision making of well-informed people with also the financial ability to invest in such developments. Leaving out individuals with fewer means or other interests for whatever reason, be it lack of time, different worries are excluded. These concerns are well known and considered important among municipalities and parties such as ECL, however the means to address them remain mediocre or not available. One notion that was offered was to allow citizens that do not hold shares in for instance ECL, to still be able to become a member of the cooperative and therefore gain a voting voice on the cooperative's decision making means with regard to SPD Bankhoef. Therefore gaining decision making influence without having to personally invest.

#### *Municipal double role*

In terms of final decision making in both the policy and project process there is one final decision maker. The municipality establishes policy, which is a reflection of the municipal ambitions. But the municipality also provides permits that allow developers to continue to construct their projects. From their role, the municipality has a responsibility to objectively work for the interest of their citizens. In practise, however, as the cases show, the interest of the people does not always align with the ambitions regarding RE. The municipality is placed in between their ambitions and their obligation towards stakeholders. As the decision making in the municipality is also politicised it is arguable that biases strongly influence the decision making process.

The analysis of the participation strategies through the tenets of energy justice shows that the municipal approach to participation is much more limited than the approaches developers use. A meaningful participation process is expected from the developer during the project development phase. However, as the municipality is the decision maker in both processes it suggests that the municipal participation approach should match the developers approach in terms of effort and input. Feedback from participation sessions during the project participation also suggests that many citizens are unaware of the current policy.

### **Informing and consulting citizens**

#### *Willingness to participate*

In terms of project development, there appears to be an understanding among project developers that involving citizens actively during their project has a positive effect on the outcomes of the spatial planning procedure. By involving citizens, their concerns can be addressed in an early stage avoiding having to address formal complaints which delay the permit application procedure. Directly in relation to this is the fact that it gives citizens the sense that they are taken seriously and that they are able to shape the project development

in a way that in their interpretation makes the project better. Developers acknowledge that citizens provide feedback on the local level that they would not have come up with themselves as citizens know their environment best.

Complexity arises when we start discussing who is consulted and when opposition groups are more apparent when it comes to making their views known. Stakeholders with a more positive regard towards the SPD might not bother mingling in the discussion and stay in the background. Developers actively aim to engage the public as much as people however state that there is a limit to what means they can employ to do so and that they cannot force people to take part in the development. Stakeholders' perception of the willingness of a developer to ensure a meaningful participation process might be just as important as the actual participation process. This case study shows that there are also citizens groups that are not interested in a role in the participatory procedure. That does however not directly lead to a feeling of not being taken seriously. It might just be their personal view.

### *Consultation groups*

In the case of Bankhoef, the working group functions as a feedback group whose suggestions are also followed up on. By doing so, becoming an important stakeholder group during the development. When the project is closing in on the exploitation phase, the working group could also function as a decision making group on how the public fund should be allocated. In this sense, moving beyond a consulting group towards more co-creation. Final decision making however, remains with the developers. Any interested stakeholder is invited to reach out and join the working group, however only a limited group of people and organisations do/did so.

With the case of Berg en Dal the developers also aim to establish a consultancy group after the permit grant phase, which could function as a board that decides how the financial compensation and arrangements are structured and divided. Citizen consultation and involvement is considered something positive in the SPD business. Difficulties arise, however, if the aim is to include citizens in the broad sense of the word. Bankhoef experienced problems in getting any citizens involved broader than environmental organisation and directly surrounding inhabitants of the project area. In the case of Berg en Dal we can see an active participation from the opposition DE Berg en Dal. The question remains if the consultancy group, that is to be established after the permit is granted, will lead to more citizens participating who are now positive and choosing to remain absent in the participation process.

### *Transparency and intentions*

Decision making based on an inclusive consultancy process in which stakeholders are actively approached and are invited to express their input through different means is relevant for coming to a fair project design. It is also important however that stakeholders can see a transparent information flow, that input is being recorded and responded to. The way in which information is being shared throughout the project development is a crucial undertone in any stage of the SPD. As a developer the public dialogue is a way of building a relationship with the public. Transparency, accessibility and timeliness are important aspects that contribute to stakeholders impressions of a fair decision making process. The cases show that developers are getting applauded for their communication approach and information sharing during the process and building a positive relationship with the

opposition to ensure they are on speaking terms looking for options. The case studies also showed that parts of the dialogue that were not public, such as compensations being offered to directly impacted stakeholders or unclear negotiations between individuals might be interpreted as payoffs by the developer to ensure citizens wouldn't file complaints. Even though this was not specifically the case it can cause disruption in the development process.

#### *Relevance of participation reports*

As part of the permit application, municipal councils expect developers to provide reports of how they approached participation, what feedback they received and how to respond to this. Doing this provides a positive response that works two ways. From the municipal and citizen point of view, developers are 'forced' to take citizen opinions seriously. Forcing them to act on the various concerns that citizens have. From the developer point of view, it provides a report of which considerations they had to weigh off which made them draft up the project plan up until permit application. Which provides transparency towards the public on:

- I. How they aimed to involve citizens
- II. What measures they took
- III. To what extent they put energy into coming to a good project design.

At the same time any important stakeholder which for any reason chose to not participate will have had ample time by then, as shown by the participation reports, to make their concerns known. Proving to the council the goodwill of the developer, which might otherwise be framed in a negative manner by either some opposition, media branch or specific formal views on the permit application. The final draft is the result of a process in which all personal beliefs that have in one way or another been made apparent to the developer are weighed and if possible fit into the plan. And it's therefore also the role of the developer to judge objectively if that is done correctly. An inclusive participation trajectory in which any stakeholder is able to consult contributes to a more fair and stronger project plan. Transparency through reports and open conversations is considered to contribute positively to the outcomes and process.

#### 5.2.3. Distributional justice

##### **Costs & benefits**

##### *A change in perspective on land-based solar parks*

SPDs are expected to have an impact on several aspects in the project area and its surrounding. Main concerns of stakeholders emphasise on the expected negative impact that SPDs have on the landscape. The visual impacts are considered to be drastic, especially in the open fields that the project areas currently are. Adding to this, is the expectation of stakeholders that areas covered with solar panels will have a negative impact on nature and biodiversity. Issues on landscape and nature are partially being addressed and considered by developers and municipal decision makers by placing panel rows further apart. Also compensation is offered as part of the full project location has to be reserved for landscaping design. In some cases more than in others. Some stakeholders suggest that

with good project design a SPD can actually contribute to nature and biodiversity as the current land use (mainly intensive agriculture) is more destructive.

TPsolar described the current state as an ongoing transition, in which SPD are moving away from being flat fields with panels to project designs that encompass multiple functions. While in practise this mainly is a combination with renaturation or landscape design, there are also pilots and projects that employ other multi-functional uses such as Agri-PV. In short the solar energy market is moving to a next generation of solar parks (PC, TPsolar, 15-07-2021). Which requires an ongoing learning process by municipalities and an eye for innovation in the political sphere (PC, Gemeente Uden, 20-07-2021).

Stakeholders still expect SPD to have external effects on different domains that are currently not taken into consideration well enough. A clear example of such externalities is the potential impact on the recreational and tourism sector which has an economic impact on the local level (PC, DE Berg en Dal, 26-09-2021). As there is no way to determine them currently, external effects of solar parks are unlikely to be compensated in any way. Some externalities are compensated such as potential loss of value for housing nearby the project location. Stakeholders point out however, that a monetary compensation does not necessarily also cover the effects that living nearby a SPD can have.

#### *The relevance of the location*

Stakeholders also point out that the locations chosen for projects are not always the most optimal. Projects are initially accepted or declined by the municipality based on their project proposal. Municipal guidelines for SPDs focus on several aspects such as landscape design, participation and nature. In this sense, optimal locations for, for instance, agriculture can be selected for SPDs even though there are lesser land plots available. This also goes for various other considerations such as cable length which has a large impact on the project costs and therefore leaves less funds for investment in landscaping and other project aspects such as public arrangements. Citizens resistance is often strongest when there is a relatively large group of addresses closely near the project location. Especially with the case of Berg en Dal, organised resistance and large groups of people clearly stand out in contrast to the resistance recognised in the case of Vluchtoord II.

Secondly, due to location speculation, developers are offering high premiums for contracts with land-owners for the possibility to propose their plan to the municipality. As a result land prices have risen and impacting other markets such as the agricultural market. Leaving farmers that are looking for their own piece of land to cultivate with a difficulty to find their own land. While in itself land and the price a landowner gets for it are a private matter and market related it is important to consider that the rise in land prices are funded for a large part on a subsidy programme SDE+.

#### *Financial benefits*

There are also benefits to be expected to come from SPD developments in addition to the percentage of project area that is landscaped with green elements. First of all, developers often aim to contract local companies for the development of the park and at a later stage also the required maintenance. In this sense the solar park brings a demand for workers in the local area. These benefits however only go out to a private group. In many cases this aim is also part of the project proposal towards the municipality.

Secondly, SPDs have financial participation strategies which usually entails at least either a public fund and/or an arrangement which is to benefit the public as a whole. In this sense SPDs also directly bring financial support for the local level. The financial participation



programme might also entail some form of private investment which offers a relatively low risk rate with the revenue it brings. This can come in different forms and shapes but the difference relates to whether this includes ownership. In addition to revenue through the SPD investment citizens might also remain partially in control of the new form of local energy production. With an increasing demand for “clean” energy being in control of RE energy sources might end up a great benefit in the near future as well as remaining in control (to some extent) of what happens in your local environment.

Thirdly, with regard to SPDs the practise of financial participation is becoming more common. As a result citizens are offered to financially invest and in most cases benefit in the form of revenue from a local project. In some cases even remain in control of the day long term exploitation through local ownership.

It should be noted that, as this transition is politically and publicly considered a positive development, it is not possible for all members of society to participate financially. Financial participation is based on personal investment. While this is often considered a positive aspect, it is in practise only reserved for the citizens that possess the means to actually take part in such options. It indirectly could contribute to creating an increase in the welfare gap. Additionally to this, it provides the more wealthy with control over the means of production of our current and future supply of RE. Stakeholders in the cases have identified the same problem and it is considered a relevant topic in politics. However, effective measures other than the public fund or marginal arrangements are currently the only strategy to tackle this issue. At the same time, Agem found during the development of Zomereiken that in many cases citizens are either not interested in financial participation or not aware of the possible benefits. As a result Agem has to convince citizens that an investment in RE production can bring substantial benefits when considering the energy transition.

## 6. Conclusion

This chapter summarises the findings with regard to the central question of the research in paragraph 6.1. In the second paragraph 6.2, recommendations are provided with regard to participation and their role in SPD developments. The chapter closes off with a short discussion of the use of the energy justice framework as an analytical approach in paragraph 6.3.

### 6.1 Main research question

This study set out to discuss the various ways in which land-based solar park developers approach the concept of participation during their projects, in order to address the main concern of participation which suggests that participation is often a deceptive form of dominance in which institutions make people believe they are making decisions. To do so, this study applied an energy justice approach in order to structure the concept of meaningful participation and analyse different strategies found in cases.

Furthermore, this study approaches participation through a developers perspective as there is a need to better understand the considerations developers have to make and how they influence meaningful participation. At the base of the research has been the following question:

*“What different participation approaches do land-based solar park developers apply and how can the idea of energy justice contribute to meaningful participation in order to realise fair and just development of ground-based solar park developments?”*

This research yields two important main conclusions:

The first one is that developers adapt their participation strategies depending on the concerns and needs of stakeholders. A participation strategy in that sense is not set in stone. A meaningful participation strategy is able to shift towards the needs of the citizens. Developers need to allow for additional meetings and discussions, look into alternative suggestions and address citizen concerns. In this sense adjusting the different modes of participation depending on the needs and feedback of the different stakeholders involved in a development.

The second, relates to the relevance of participation during the policy development phase with regard to specific solar park developments. Meaningful participation requires stakeholders to have the idea that they are able to participate during the whole process, referring to both policy development as well as project development. Meaningful participation does not limit itself to a specific project and is depending on the municipal guidelines and political processes that have happened beforehand and during the project. The relevance of beforehand established policy is evident in all cases studied. The findings state that stakeholders should be more closely and accurately involved in the policy development process beforehand. In order to avoid delays and opposition when an initiative is proposed and accepted to enter the development stage.

The case studies show that the approaches to participation in SPDs have strong similarities. Some developers, however, go through this process in a more elaborate way than others. Developers' show that they, based on the consultation of stakeholders during the

development, adapt their participation approaches to the concerns and needs of stakeholders.

Local policy creates clear guidelines to which developers must commit. In some cases, this is being done through maps which direct the SPDs to specific areas. Established policies then open the way for initiatives which are selected through municipal boards. Citizens, however, are often disconnected from this process as they do not become active until such a development is realised in their immediate vicinity. In terms of complexity for both policy developers as well as SP developers, the fact is that most stakeholders, especially citizens, do not become involved in the process until policy has been passed and a specific initiative is started in their vicinity. Citizens are then involved at a wrong stage in the development process.

When discussing project participation, citizens' main concerns regarding decision making focus on various effects on the landscape as well as the environment. This study shows that developers who make decisions based on a consultation process with transparent information sharing and citizen involvement, positively address these concerns. The current trend of developer approaches to participation appear to lead to justified and fair decision making in terms of project design. It addresses citizen concerns and aims to come to an objective project design that reflects the input of all stakeholders as much as possible.

Final decision making, lies with the municipality and not the solar park developers. Local ownership is often understood as citizen empowerment, but in practise the municipality is in control of permit grants. Local ownership can only contribute to fairer decision making to a limited degree and is therefore not the solution for fair and just decision making. Municipalities are caught in between ambitions in the energy transition and objectively weighing the interest of all stakeholders.

National ambitions in some cases do not go well with conservative municipalities. The large landscape impacts of solar energy projects are considered to be a strong negative impact on the local environment. Even though there appears to be an increase in the general understanding for the need renewable energy, opposition is still apparent. This suggests that the debate for the need and understanding of renewable energy on the local level is still ongoing. The cases show that in the municipalities where there is already at least one SPD, citizens are more comfortable with the development of a solar park. Suggesting that the novelty of solar parks to some extent influences the interpretation of local stakeholders. Participation strategies by the developers contribute to the stakeholders understanding of the actual impact on several relevant factors. By positively adopting the indicators for procedural justice in a participation approach, a developer can open a transparent debate with citizens at the right moment. In practice developers aim to widely inform all stakeholders to participate and provide multiple means to do so. It is important to realise in this process, that not all individuals have the need to participate actively in these discussions and merely want to be informed and to be able to ask questions. Developers often organise different means with which a dialogue can be started. In some cases this dialogue is one-sided, which positively influences the participation dialogue with stakeholders.

Partially, the disagreement of these projects are rooted in the uneven distribution of benefits and costs. SPDs strongly affect agricultural land prices and create potentially high revenue for individual farmers, leaving others with nothing. The current SPD selection process does not encompass the use of least profitable land for the use of RE production. Location selection, as it is currently being done, is considered to lead to inefficient land-use.

Citizens investment in SPDs is often reserved for only specific groups of society due to the costs of bonds and shares. Developers have aimed to address this. The public fund is one way this is considered to be tackled, however, compared to the private compensation for the landowner and the potential individual revenue, this can be considered marginal. Especially if it's to compensate for the numerous citizens that are not investing.

The cases do not suggest any distributive mode to be more positive than others to come to meaningful participation. The chosen approach is always case dependent and related to the location, the public and the local policy. The chosen approach is often a combination of modes, which does not necessarily reflect the idea of distributional justice. This suggests that fairness and justice might be more relevant than the meaning of the words in the true sense.

## 6.2 Recommendations for participation in practise

### *Taking the time to learn*

The large demand for RE to meet our energy needs has resulted in a relatively sudden switch for policy makers to a new field of expertise. As a result, projects are being framed as pilots and new policies are being developed. It is important to realise that these projects are one of the limited sources of renewable energy that are considered scale able, effective and affordable. However, we should also acknowledge that there is an ongoing learning process for many actors involved, especially policy makers and within politics. The need for more clean energy is indisputable, as is the impact they have on our living environment. At the same time, the how, through what means and where is still very much open. The transition from privately owned means of production towards more locally owned, produced and consumed energy should remain a relevant part of the policy and project processes.

The demand for electrical power is likely to increase for various reasons such as further electrification of mobility and heating. This idea of the energy transition that we have only just begun might offer the perfect situation for ensuring the right to energy for all people of society. The participation coalition and the climate agreement have made progressive steps by embedding procedural and financial participation in policy. However, the energy justice approach shows once again that not everyone is willing to participate or simply does not have the means to. Meaningful participation following the EJP suggests a process in which decision making comes forth from transparent information sharing and consulting of any and all stakeholders.

As the need for RE is apparent, municipalities are responsible for a fair and just energy transition. A steady pace is important but it is important to maintain quality whilst working towards much needed ambitions. As municipalities honestly admit, experience and knowledge of SPDs is minimal, projects are considered pilots and the SPD market is currently heavily stimulated by subsidies as are roof projects, possibly leading to unwanted externalities.

### *Explore different approaches to location selection*

In order to make participation meaningful, citizens should be involved as early as possible. Municipalities should therefore make sure that participation programmes start with policy discussion. Citizens lack decision making power in either stage of the development and are dependent on project developers and civil servants and the municipal council for objective reasons in terms of policy and project design. The current system in which developers approach landowners to agree on building solar parks lead to high premiums for individuals on non-optimal locations.

It currently is the municipalities' responsibility to work out policy and locations for SPDs. The pressure on farm land is often discussed in relation to SPDs. The impact on farmers is evident and leads to high premiums for individuals, while it at the same times leaves others with nothing. A change in approach could adjust these skewed divisions of outcomes both positive and negative. Decision making regarding location could, for instance, be organised by a collective of farmers who appoint the least productive pieces of land and share in the profits generated by the SPD through an agreement.

### *Establishing fair guidelines - The policy*

The cases highlight a participation process by municipalities largely based on a single evening participation event often visited by a small representation of the public. Developers, on the other hand, are expected to go through an intensive participation procedure involving multiple public sessions and individual conversation with stakeholders involved as it is believed to lead to a more meaningful participation process.

Policy is currently based on RES input, various informative sources such as maps, ecologically protected zones etc. However, a better mobilisation of local knowledge could contribute to less resistance before projects are proposed by developers. This is especially important when focussing on the groups that are currently considering these developments not part of their agenda, or in no way beneficial to them and therefore not interested in participating. It is likely that some citizens will only become active when specific projects are developed in the close vicinity. By making the policy development more inclusive and representative, NIMBY reactions are less likely to slow down project development.

Shifting more attention to the procedure during policy development could better inform citizens of the relevance and importance of policy and the outcome. Citizens that become active too late, miss the opportunity to participate in the policy process or do not realise the importance of the policy development with regard to SPDs. By extending the policy development process and making it more inclusive, civil servants will be able to construct more detailed guidelines. A suggestion could be to organise a second round of participation, in which citizens living close by to possible locations for solar parks are individually invited per letter. This example follows the finding that most citizens will not become active until SPD are becoming more concrete.

## 7. Discussion and Reflection

The first part of this chapter reflects on the research design and limitations which might have played a role in the research and its outcomes. The second part of the chapter provides relevant concepts and suggestions for future research that are either complementary to this application of the EJF to participation or highlight a further topic for research.

### 7.1 Contribution to theory: energy justice & meaningful participation

In this study, the EJF was used as an analytical framework to review the various participation strategies used by developers in four cases in the Netherlands. This approach yielded three key insights on the appliance of the EJF with regard to this context:

- I. The EJF provides a thematic approach to various aspects related to fair and just decision making with equally distributed outcomes.
- II. The EJF provides a very clear approach to look at a specific case. It opens the debate on transparency during the development. Providing insights in how citizens were involved and how influenced decision making and the allocation of different outcomes.
- III. The EJF relates well to the various modes of participation with regard to the energy debate which, looking at the ladder of participation, differentiates from non-participation to complete citizen ownership.

Structuring participation through an energy justice approach can positively address the concern mentioned by Arboleda (2015) that: Participation is often considered as an empty policy instrument to create a false sense of dominance with regard to decision making (Arboleda, 2015). The approach suggested that energy justice and participation are not limited to individual projects. The prior to the development established policy, plays an important role in the process and its outcomes. As well as the large scale private benefits suggesting an unequal division of benefits. These concerns of citizens are in line with the issues that the principles of energy justice aim to address as defined in literature (Sovacool & Dworkin, 2015; Mundaca et al, 2018). Energy justice as an approach to structure participation strategies is therefore considered an effective approach if the aim is to reach meaningful participation, highlighting concerns in an early stage which leaves ample time to adjust and adapt to the needs of stakeholders.

In practise however, there are also some difficulties. Perceptions of justice and fairness, as became evident during the interviews, would change depending on the stakeholder that was interviewed. In this sense it became difficult to interpret the notion of justice. Other scholars have earlier highlighted the desire and need to be able to quantify a degree of energy justice (Gilbert & Sovacool, 2014). However, it is also acknowledged that not everything can or should be quantified (Ackerman & Heinzerling, 2005). The idea of energy justice with regard to meaningful participation is also not to quantify, but to work towards a combination of nodes of participation, both procedural as well as distributional, that provide stakeholders with a sense of justice and fairness towards energy accessibility and the effects of negative environmental and social influences on energy distribution (Sovacool & Dworkin, 2015).

Furthermore, in practise, participation with regard to SPDs is always subject to limited decision making as the municipality is the key decision maker in both the policy and project process. In the cases studied, however, partnership was the highest mode of participation signalled. Partnership as a mode did, however, not necessarily lead to a more meaningful participation process. In the end, developing a solar park requires a business model in which stakeholders are depending on incoming cash flows. This is related to the fact that a solar park of this size, if not funded by public money, will need to generate a positive cash flow which limits the possibilities regarding project design.

A commercial developer's participation approach, which applies the modes of information and consultation, can therefore result in the same degree of meaningful participation as a project that includes partnership or is a community initiative. How a project initiator perceives meaningful participation, whether this is a bottom up group or commercial developer, strongly impacts how participation is structured during a development. This perception is the result of an interplay between the different concepts that make up energy justice, namely decision making, consultation, information sharing and outcomes. The EJF as an approach for meaningful participation is considered a fitting one. However, it does not offer a standardised approach to participation.

All projects held different combinations with regard to the various modes of distribution. There did not appear to be any relation on the specific mode and the perception of meaningful participation. Ownership is considered in the public debate to positively affect participation (Zomerdijs, 2018). In practise however, the citizens' concerns and topics of discussion related mainly to landscape and environmental effects. The topics of concern did not vary much between the cases that had ownership as one of the modes of distribution.

The idea that all stakeholders should benefit from the SPDs was apparent in all the cases. This was mainly expressed by organised citizen groups and municipalities, to avoid the risk of certain groups in society being left out. This suggests that a mode that facilitates investment alone, does not contribute as much to a justified allocation of outcomes, as a combination of various outcomes.

## 7.2 Future research recommendations

A case study approach on SPDs proved useful to provide a clear image of how participation is conducted on the prior policy level as well as the development stage. It shows the concerns of locals with regard to their environment and how developers work with these considerations. It also highlights several problematic insights that should be addressed more closely but were outside of the scope of this research.

First of all, SPDs are very much subsidy driven in the Netherlands. As a result we can see a large number of developers submitting initiatives in any municipality. This amongst many other effects also pushes land prices for agricultural land. It would be relevant to research the precise relation between this strong subsidy driven programme, its specific impact on for instance farm land prices, SPDs and wind farm initiatives and the role of farmers through an energy justice approach.

In addition to looking into the perceived drivers of the increase in land prices, it would be interesting to research various alternative approaches that lead to a better location selection in terms of various aspects such as connection length to grid, collectively submitting farm land or other possible approaches that might come forth from the prior mentioned study.

Secondly, these cases have been studied at a specific point of time and are currently in the project design phase working towards or recently being granted permits. It would greatly contribute to the knowledge of how participation strategies with a focus on the second phase, the financing phase, would relate to community acceptance. This research shows a clear insight in how decisions are made and how a project design comes to be with a focus on process participation. Adding to this would shed light on how developers work out their ambitions made during the project design phase. As only limited guarantees are currently in place, it remains to be seen how financial participation will eventually be constructed and how it impacts the local area.'

The third recommendation for future research is based on the dichotomous relation between energy production and consumption. The scope of this research has been on the municipal and local level, but ongoing RES negotiations are having an important influence on what will happen on the local level in the coming years.

The RES is set to address a fair distribution of productions throughout the Netherlands in which actors are forced to cooperate and think outside their political borders to foresee the national energy demand. As a result, there is a shift in the production of the RE energy that the cities require to more rural areas. This could be considered as a necessity, therefore it would be relevant to consider how this division could be used to ensure an equal division of the benefits and costs that these developments bring. The RES programme places the ambitions and responsibilities of stakeholders of the energy transition on a regal perspective. This dialogue and policy created here might have significant impacts on the development of meaningful participation. And as literature has shown, timeliness is one of the key factors for a just and fair transition to low carbon energy systems (Mundaca et al, 2018). Applying the energy justice framework in analysis the ongoing RES programme could lead to relevant insight of the process of distribution in terms of justice and fairness, which can further contribute to structuring the modes of participation and their outcomes.

A fourth recommendation relates to the topic of energy poverty. In all cases stakeholders expressed concerns regarding some groups of society not being able to participate financially, which might lead to a wider gap between poor and rich. The exact impact of this on participation strategies, however, is unclear. In addition to this, strategies to properly address the issue clearly remain absent as stakeholders are looking for better fitting ways to deal with the issue. With the rise in energy costs, research leading to adequate strategies to address energy poverty and include groups of society that stand to benefit most from these RE projects is perhaps most needed.

An increase in the mobilisation of stakeholders to participate might be one way in order to create more inclusive and therefore just procedures. The issue of mobilisation has earlier been highlighted in literature (Lacey-Barnacle & Bird, 2018) and as the cases have shown is still an ongoing issue with regard to participation. Mundaca et al (2018) also stress the importance of the representation of different groups of society. Forthcoming from the relevance of these factors this recommendation for further research could also be combined with the ongoing RES programmes as mentioned in the third recommendation. Analysing the



RES through the tenets of energy justice could carefully address the issues and provide suggestions on how to tackle them before RES policy and the current ambitions are translated to specific actions.

Lastly, based on the outcomes, a follow up study which combines quantitative means and in-depth interviews with citizens can verify and deepen the understanding of how meaningful participation could be shifted more towards the policy development phase. In doing so, contributing to participation in the policy development phase leading to better citizen involvement and understanding of the relevance of RE and how it is likely to impact the physical environment and therefore peoples' livelihoods. In specific, this research could statistically determine whether or not citizens would feel the need to emphasise the policy development phase more. Kluskens, Vasseur & Benning (2019) suggested to do a similar study on the effects of different modes of participation on the acceptance of solar energy developments. A better understanding of the different ways in which and at what moment during project development citizens can influence SPDs, could contribute to the degree of meaningful participation during the policy development process. As a result, projects can be developed following more widely supported guidelines leading to shorter procedures and more positively perceived projects.

### 7.3 Review of research approach & methods

#### *Cases and data collection*

One main concern regarding the data in this research is that the respondents, who consisted mainly of policy makers and commercial developers were interviewed through semi-structured in depth interviews,. Data regarding citizens, and in specific stakeholders who had viewpoints against the SPD, were mostly indirectly based on participation reports, media reports and other platforms that provided insight herein. For the cases of Bankhoef and Berg en Dal these insights could be included through interviews with LBH Hernen and Leur and DE Berg en Dal. For Zomereiken however, a request was sent to a number of involved citizens who replied they were either not interested or did not react.

Data from participation reports are considered to be accurate as they are public. Meeting reports were approved by participants before posted online for in the case of Bankhoef. The participation report of Zomereiken offered unaltered conversations through emails and similar reports. In this sense, the resources are considered representative, however, lacking the in-depth discussion that the interviews with other stakeholders provided.

#### *Analysis*

The EJJF proved to be a workable framework to analyse participation, leading to various probable insights. Lacking in this research, however, is the determinative basis with which these hypotheses could be tested. Looking back, this research might have contributed more if it had applied both a qualitative and quantitative approach. to be able to verify the results to some degree through a quantitative method.

Another insight is that the EJJF clearly pulls apart the various aspects that are considered to make up energy justice. While this allows for a clear approach to data, it also suggests that these various aspects can be considered apart from one another whereas in reality they are

almost always related to each other and are interdependent. This sometimes led to repetition in the way this research was structured through the EJP analysis. While this is not necessarily a problem it does show that justice is a combination of various aspects. In this sense, giving citizens for example more benefits does not necessarily contribute to a better perception of a just process as decision making could still be lacking.

Atlas.TI as an analytical tool proved an appropriate deductive analysis method to clearly take apart the various statements and opinions running through the semi-structured in depth interviews. Interviews often did not follow the pre-written protocol. Through the coding structure, interviews could be interpreted systematically nonetheless.

Besides this, more inductive insights could also be noted into categories that related in one way or another to an analysis of SPDs through the tenets of energy justice. This yielded for instance the insight into participation exhaustion where individuals express that they do not feel the need to participate or are fed up with having to participate in projects and have stopped doing so. Coding also helped structuring the strategies that developers used and what roles the different stakeholders had during the project development.

### *Research scope*

This research approached participation strategies of SPDs through an EJP to generate a better insight into meaningful participation. It is important to realise that the cases studied are currently all still in a relatively early stage of development. They are all working towards, or nearing permit application. Findings and recommendations should consider that these are based on the current stage of the project development. This especially can be noticed with regard to the financial participation part of participation strategies as a whole. However, due to the time the developments require, it was not possible to track and analyse how developers approach critical notions such as inclusion of stakeholder that either do not want or do not have the means to financially participate. Because the plan design for financial participation is to a large extent only theoretical, the specification of how developers intend to include less resourceful members of society is not yet strategised and therefore can only be analysed superficially.

A second relevant aspect is that these cases are studied based on various considerations such as project size, accessibility and development stage, which are always context specific. While findings might suggest that they are also applicable to other SPDs, there is no guarantee that this is the case. This is a consideration which has to be taken into account with a case study approach.

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## Appendixes

### I. Overview respondents

The following represents a list of the stakeholders that participated in the in depth semi structured interviews that form one of the primary sources of information for this research.

Project Name	Role
<b>Solar park Bankhoef</b>	
RE Developer Pure Energie	Developer
Energiecoöperatie Leur	Developer / LEI
Municipality of Wijchen	Facilitator
Leefbaarheidsgroep Hernen & Leur	Local organisation
<b>Solar park Zomereiken</b>	
Regional energy cooperative Agem	Developer / REI
Municipality of Oost Gelre	Facilitator
<b>Solar park Vluchtoord II</b>	
RE Developer TPSolar	Developer
Municipality of Uden	Facilitator
<b>Solar park Berg en Dal</b>	
RE Developer Zebra	Developer
Duurzame Energie Berg en Dal	Local organisation
Municipality of Berg en Dal	Facilitator
<b>Preliminary interviews</b>	
Municipality of Arnhem	Facilitator
Werkgroep Dieren-Zuid klimaat actief	Developer / LEI
Radboud university	Research department
Horizon NL	Developer

## II. Interview guide

### Interview guiding lines EJF solar park development

#### Introduction and background of the studies

##### Background project invitations

- How did the project come to be?  
(- Who were the initiators? What other RE projects had preceded the solar park development?)
- What was the reason for the project?
- Timeline of the project
- Was the project worked through in different phases / stages?

##### Background interviewee

- Role during project

##### Actor impressions

What was the role of the municipality during the project?  
(initiation, participation, realisation phases)

What was the role of the co-developer / energy cooperative during the project?  
(initiation, participation, realisation phases)

What other actors play/ed an important role in the development of the solar park?

##### Procedural Justice

##### Decision Making

##### Biases

- Who made the decisions during the different stages of the development?
- Were certain preconditions defined by different actors?  
(- such as the municipality stating they would require 50% / certain financial participation means? / conditions on decision making)
- Was the local community involved before the preliminary sketch of the project was made?  
(- How did this influence the project development?)  
(- To what extent was the local community involved? (Arnstein's categorisation))  
(- What impact did this have on citizens perception of the project)
- On which parts of the development were citizens able to make decisions?

(- How critical were these decisions in relation to the whole project?)

## **Consultation Process**

### **Ability to be heard**

- Through which means did the initiators aim to communicate with the stakeholders?  
(-To what extent did the aim of the participation approach achieve its goal?)  
(-Was this enough to get the full depth of concerns and input?)  
(-Was this aim actually achieved?)
- How often did the initiators create the opportunity to discuss the development with stakeholders/the local environment?
- What did the initiators do with the feedback they got?  
(- Did they report, did they adopt, how did they respond?  
(- What did the initiators not adopt from the feedback?)

### **Institutional Representation**

- Were local groups represented during the discussion or feedback rounds with the initiator?  
(- Which groups did not actively participate, and why?)
- Were individuals just as represented or considered important as institutions or groups (i.e. energy cooperation)?
- What normative codes of participation conduct were expected from the project initiator by the municipality? (-  
-

### **Access to Consultation**

- At what stage did the initiator involve and inform the general public of this development?  
(- Was this done simultaneously?)
- Was the local community involved before the preliminary sketch of the project was made?  
(- To what extent was the local community involved? (Arnstein's categorisation))  
(- How did this influence the project development?)  
(- What impact did this have on citizens perception of the project)
- With regard to decision making in the true sense, what features were left to the general public to decide?

## **Information Sharing**

### **Information Disclosure**

- How transparent has the initiator been with regard to land prices, revenue, costs of the project?

- Was information accessible to any stakeholder?

#### Objectivity & Adequacy & Timeliness

- Through what means was information shared?  
(- Were all types of citizens reachable through these means?)
- What type of message was shared through the means of information sharing?  
(- positive/informative/through municipality or developer/)
- At what stages during the process was information actively being shared with the public?  
(-why were these timelines chosen specifically?)
- What role has local knowledge played in the participatory meetings? Do citizens

#### **Distributive justice**

##### **Outcomes**

##### Allocation of costs

- What were the concerns of local groups with the planned development of the solar park?  
(- What was the expected impact and how did participation address this?)
- What land-use was applied previously to the location?  
(- How did the developer approach the local environment with the change in visual impact, local use?)
- Did the initiator ground an public fund to invest in the local space in order to 'compensate' the impact of the solar park?  
(- What was the goal of this? Did it come forth through participation or?)





















##### Allocation of Benefits

- In what ways did the development have a positive effect on the local environment?  
(- Not limiting to monetary values but also natural and socio spatial)
- In your opinion, Was the project considered to have a positive impact on the local scale considering perspectives of the various stakeholders?
- How was 50% local ownership approached as a target?  
(- Why in this way? Did any groups have priority to participate in the local ownership option?)
- Who was defined as the 'local environment'

#### **Interview end**

Who else should I speak to, to get a better picture of the case? Contact to any of the local stakeholders/citizens?

### III. Code Book overview

	Name ▲	Grounded	Density	Groups
○	◇ ability to be heard	 59	0	[consultation process]
○	◇ acces to consultation	 96	0	[consultation process]
○	◇ addressing energy poverty	 8	0	[outcomes]
○	◇ allocation of benefits	 88	0	[outcomes]
○	◇ allocation of costs	 46	0	[outcomes]
○	◇ decision making	 112	0	[decision making]
○	◇ developer's Role	 29	0	
○	◇ information disclosure	 60	0	[information sharing]
○	◇ institutional representation	 35	0	[consultation process]
○	◇ lack of knowledge/experience of SPD	 34	0	
○	◇ local response (NIMBY)	 20	0	
○	◇ location selection	 44	0	
○	◇ mobilisation of local knowledge	 55	0	[information sharing]
○	◇ municipal Role	 75	0	
○	◇ objectivity, adequacy and timeliness	 65	0	[information sharing]
○	◇ participation exhaustion	 31	0	
○	◇ participation strategy	 98	0	
○	◇ politicized	 42	0	
○	◇ public's role	 24	0	
○	◇ signals of resistance	 74	0	