

How to obtain social licences to operate for renewable energy projects

A case study of Zonnepark Ameland

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Picture on front page: Duurzaam Ameland, 2019a

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Preface

“Geen draagvlak, dan geen zonnepark” (Omrop Fryslân, 2017). Translation: *“No public acceptance, no solar farm”*, that is what the Councillor of the Municipality of Leeuwarden said about the controversies surrounding an initiative for a solar farm near the village of Wirdum in the north of the Netherlands. The people of Wirdum reportedly, were furious (Bosma, 2017). What could have happened here? The explanation was evident: the developers simply handed in their application of a 41-hectare solar farm without any form of consultation, participation or engagement in regard of the inhabitants of Wirdum (Omrop Fryslân, 2017). This case shows two things that are important for this thesis. First, that governments are demanding more public participation in developments and that renewable energy projects need acceptance/approval from communities in order to gain legal licences. Second, it shows that without proper community engagement strategies, developers will not gain acceptance or approval from communities for their projects.

In my Bachelor, my Master and my work as a consultant, I have tried to find ways on how projects can obtain this acceptance and/or approval from communities. I am thankful that I could explore this in my thesis under the guidance of professor Vanclay. In the social licence to operate (SLO), I found a useful and practical concept that aided in this search. However, I could not have done this without the help some individuals. Of course I want to show my gratitude to mister Vanclay as my thesis supervisor, but I also want to thank multiple Amelanders who have helped me understand the case of Zonnepark Ameland. At last, I want to thank any other that has helped me in my search and work, especially Lotteke, Marijke, Avery, Aukje and Hylke.

Abstract

Considering that both renewable energy projects are increasing along with protests against these projects, the question arises how proponents can obtain acceptance and/or approval; social licences to operate, from communities for their projects. To find an answer a qualitative case study, containing interviews and document analyses, of a solar farm on Ameland was done based on a SLO framework. SLOs can be obtained on four levels, starting from withdrawal (no SLO) and increasing from acceptance to approval towards the highest level, psychological identification. These levels are divided by three boundaries, legitimacy, credibility and trustworthiness (Thomson & Boutilier, 2011). The case study shows that involvement of governments as proponents can hamper the perception of impartiality and therefore the acceptance of projects. However, local embeddedness of projects, achieved through local ownership and representation provided by local energy communities can increase levels of SLOs obtained. Main impacts caused by solar farms consists of impacts on landscape, nature and previous use(s) of the location. These impacts should be considered adequately to gain acceptance and avoid withdrawal of SLOs. Zonnepark Ameland also presents that context is an important factor that can influence SLOs, for instance because of a high contestedness of space. To gain acceptance and higher levels of SLOs, public participation should not be limited to some parts or phases of projects, rather participation should be provided throughout the whole project including the location choice. Additionally, community engagement strategies should include all relevant stakeholders within the, mostly local, communities. Important is that within these strategies marginalized groups also taken into account in order to improve and increase the levels of SLOs obtained.

Key words: Social licence to operate, renewable energy, community engagement, public participation, solar farms

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Introduction

Globally, there is a rising trend in renewable energy projects (IEA, 2018), like solar photovoltaics, through increasing profitability (Bolinger & Steel, 2015; Krebs et al. 2013; Rehman & Bader, 2007; Ryan et al. 2016) and sense of urgency among governments to transition to more sustainable energy systems. This is for instance expressed in the Paris Agreement of the UN (United Nations, 2015). This trend is also discernible in the Netherlands, within the rise in production and demand of wind and solar energy (CBS, 2019), that is encompassed by an increase in solar farms¹ (CBS, 2019a). This increase sparks public debates about landscape (de Jong, 2019; van der Woude, 2018) and landownership (van Ruiten, 2017). Another debate that appears in renewable energy projects, like wind and solar energy, is about the lack of involvement and the lack of voice of provided for communities within the decision-making (Langbroek & Vanclay, 2012; Mulder, 2019; de Vries, 2017). In the case of solar farms, protests are mostly instigated by local residents near intended locations. This can be seen in examples in the Netherlands (Atsma, 2019; Leeuwarder Courant, 2018; Ramaker, 2019), but also in the rest of the world, for example the United States (Buntjer, 2018; Kelly, 2018), Nigeria (Daily Independent, 2017), Canada (Atkinson, 2018), England (Bason, 2013) and Ireland (Quinlan, 2017). These trends and debates are reasons for proponents to search for ways to gain acceptance or approval for their projects from communities; to gain a Social licence to operate (SLO). More involvement of local communities within decision-making is also one of the central aims of the new Dutch spatial and environmental law, 'De Omgevingswet' (Informatiepunt Omgevingswet, 2019; Kamp, 2016; Kwast & Wesselink, 2016; Lammers & Arentsen, 2017; Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2019). Renewable energy projects are being used, in precedence of this law, as pilots for new approaches and procedures with higher levels of community engagement and public participation (Kamp, 2016).

Research covering the SLO emerged in academia in the fields of mining and resource management (Bice, 2014; Kemp et al. 2011; Nelsen & Scoble, 2006; Owen & Kemp, 2013; Parsons et al. 2014; Prno, 2013; Prno & Slocombe, 2014; Thomson & Boutilier, 2011; Zhang et al. 2015) and later in forestry (Dare et al. 2014; Moffat et al. 2015). These fields have been broadened with renewable energy (Colton et al. 2016; Corscadden et al. 2012; Corvellec, 2007; Hall et al. 2015; Lansbury Hall & Jeanneret, 2015; Jijelava & Vanclay, 2018; Langbroek & Vanclay, 2012). However, only Colton et al. (2016) discuss the renewable energy source of solar energy. Academic interest is primarily focused on theorising the SLO or on providing frameworks for obtaining SLOs (Moffat & Zhang, 2014). Furthermore, case studies in the SLO literature are mostly about situations where SLOs were lacking (Jijelava & Vanclay, 2018; Meesters & Behagel, 2017; Langbroek & Vanclay, 2012), although Prno & Slocombe (2014) and Jijelava and Vanclay (2017) are exceptions.

When considering both the increase in solar farms and the protest against them, the question arises how initiators can obtain SLOs from communities for their projects. By looking at the case of a solar farm on Ameland, called Zonnepark Ameland, a broader framework can be developed for ways to come to SLOs for renewable energy projects, especially for solar farms. Zonnepark Ameland makes a suitable case, because there were some debates regarding the project and, because the proponents did employ community engagement strategies. Analysing cases can provide information about how these community engagement strategies were organised, what and which actors were involved and how these processes led to obtention of SLOs or the opposite. Results of this study can serve as input for practice on how to engage with communities to obtain SLOs.

¹ A solar farm is a large-scale and land-based photovoltaic power installation. They are also referred to as solar parks (zonnepark in Dutch), solar ranches and utility-scale solar.

These aims can be translated into the following main question: *'How can renewable energy projects obtain social licences to operate?'*. To answer this main question, a set of subquestions were developed: 1) How can social licences to operate be obtained?; 2) To what extent did the Zonnepark Ameland and its proponents obtain and maintain social licences to operate?; 3) What can be learned from the case of Zonnepark Ameland about obtaining SLOs for renewable energy projects?. The second subquestion is made up of a set of questions based on SLO-literature:

- Who and what were stakeholders related to the project?
- To what extent were the project and its proponents seen as legitimate, credible and trustworthy?
- What social impacts were experienced by the stakeholders and how were these impacts managed by the proponents?
- How did the proponents engage with the communities and its stakeholders and to what extent was public participation provided to them?
- What were the decisive factors that led to the levels of SLOs obtained?

Outline

This thesis starts with a literature review on the SLO that covers an introduction of the SLO, four models of the SLO, and combines these models into a theoretical framework. Additional concepts related to SLO are also considered in this chapter. The second chapter contains the methodology with the methods taken and data used in this research. This is followed by a case description of Ameland and Zonnepark Ameland. The results come after this case description and start with a paragraph about the stakeholders and communities related to the case. This paragraph is followed by paragraphs analysing the three boundaries between the four levels of SLO, Legitimacy, Credibility and Trustworthiness. Additionally, social impacts are also considered between these paragraphs. The final chapters are made up of the discussion and conclusion.

Literature review

In this chapter the SLO is introduced with a description of the academic and industry interests, and reasons for the industry to adopt SLOs along with definitions and critiques on the concept. This is followed by a description of four models of the SLO from Thomson & Boutilier (2011) with adaptations of Jijelava & Vanclay (2017;2018), Moffat & Zhang (2014), Zhang et al. (2015), and Prno & Slocombe (2014). These models are combined to form a theoretical framework for the research. The last paragraphs consider additional concepts related to the SLO.

An introduction to the social licence to operate

In the late 1990s, the term SLO emerged in the mining industry in order to cope with social-political risk and risks of both financial and reputational damage caused by conflicts with local communities and societal stakeholders (Cooney, 2017). Cooney (2017) sees the SLO as a metaphor for the issue that not only legal licences are needed for projects, but also 'licences' should be obtained from the local communities and broader public. Academic interest in the concept of SLO also grew in fields related to extractive industries and natural resources (Bice, 2014; Joyce & Thomson, 2008; Kemp et al. 2011; Lacey et al. 2017; Moffat & Zhang, 2014; Nelsen & Scoble, 2006; Owen & Kemp, 2013; Parsons et al. 2014; Prno, 2013; Prno & Slocombe, 2014; Richert et al. 2015; Smith & Richards, 2015; Thomson & Boutilier, 2011; Zhang et al. 2015), but also other industries, such as forestry (Dare et al. 2014; Moffat et al. 2015), the paper industry (Gunningham et al. 2006), green initiatives and biodiversity projects (Vanclay, 2017) and renewable energy (Colton et al. 2016; Corscadden et al. 2012; Corvellec, 2007; Lansbury Hall & Jeanneret, 2015; Hall et al. 2015; Jijelava & Vanclay, 2018; Vanclay, 2017; van de Biezenbos, 2018). Although there are multiple definitions of the SLO, most contain similar re-occurring themes. Both Cooney (2017) and Thomson & Boutilier (2011) see SLOs as community support for companies and their local operations. Within SLOs, Thomson and Boutilier (2011) distinguish four different levels: *withdrawal*, where there is no SLO given, *acceptance*, when stakeholders merely accept the project, *approval*, when stakeholders benefit from the project, are involved in the decision-making and have a good relationship with the proponents, and *psychological identification*, that occurs when stakeholders identify themselves with the project. Further, Gunningham et al. (2006) describe the concept as the demands and expectations, that come from groups in the geographical vicinity of business activities, and how these are met. Similarly, Parsons & Moffat (2014) emphasize that SLOs encompass expectations from local communities, concerning both the impacts of activities of projects, as well as the conduct of their proponents, and how these expectations match with the actual outcomes. Conversely, other academics suggest that SLOs should not be limited to local communities, rather they should also consider other stakeholders (Jijelava and Vanclay, 2014; Joyce & Thomson, 2000; Prno & Slocombe, 2014), across different geographical levels (Dare et al., 2014; Prno & Slocombe, 2014) and across different social groups (Dare et al. 2014). SLOs should also not be considered as static licences that are only gained before projects. Rather, SLOs should be considered as dynamic licences that can change over time (Boutilier, 2014; Hall et al. 2012; Parsons et al. 2014; Owen & Kemp, 2013; Thomson & Boutilier, 2011). These aspects can be combined in a definition of SLOs as follows: A SLO is the acceptance or approval, from withdrawal to psychological identification, of varying local communities and other stakeholders related to projects, activities or developments and their proponents, that is continuously granted.

The adoption of the SLO is well established in extractive industries (Cooney, 2017; Franks & Cohen, 2012) and is emerging in the renewable energy industry (Hall et al. 2015; Lansbury Hall & Jeanneret, 2015). But what are reasons for projects for wanting to obtain SLOs from communities? In extractive and other heavy industries it is widely known that not gaining SLOs can result in significant financial loss (Davis & Franks, 2011; Franks et al. 2014; Gunningham et al. 2004; Henisz et al. 2014), limited access to resources (Thomson & Boutilier, 2011), loss in reputation and market value (Liroff et al., 2014) and layoff of projects (Jijelava & Vanclay, 2018). SLOs thus effects overall business interest

(Demuijnck & Fasterling, 2016; Lansbury Hall & Jeanneret, 2015; van de Biezenbos, 2018). Obtaining SLOs can also make projects more resilient to socio-political instability. This is because, when broader acceptance of a project by different communities is already obtained, the likeliness that a project can continue under changing socio-political conditions increases (Boutilier et al. 2012; Cooney, 2017). Additionally, pressures from NGOs and the foreseeable tightening of regulations in the future are seen as reasons to obtain and maintain SLOs (Gunningham et al. 2006); or that current law and regulations are not enough to encompass the concerns, demands and contexts of local communities (Franks & Cohen, 2012; Prno, 2013; Prno and Slocombe, 2014; van de Biezenbos, 2018). Hall et al. (2015) and van de Biezenbos (2018) also state that proper community engagement can influence the issuance of formal licences in a positive way. Furthermore, the broader trend of local communities demanding and gaining more power within decision-making will strengthen the need for proponents to engage with communities in order to obtain and maintain SLOs (Pro and Slocombe, 2012; Smits et al., 2017).

Along with academic and industries' interest in SLOs, critique on the concept of SLO and the use of it by industries emerged. These critiques are for instance voiced concerning claim that the concept is almost solely used by companies to legitimize their practices (Meesters & Behagel, 2017; Parsons & Moffat, 2014; van de Biezenbos, 2018) and to uphold their reputation (Meesters & Behagel, 2017; Owen & Kemp, 2013; Parsons et al. 2014). Inadvertently, (a minority of) opposition can use the concept to hamper projects, on for example idealistic grounds (Owen & Kemp, 2013; van de Biezenbos, 2018). Another critique considers that, in practice, industries use SLOs to limit and silence opposition and therefore use the concept with the main objective to limit risk (Meesters & Behagel, 2017; Owen & Kemp, 2013). Multiple academics also find that the SLO is often used solely to manage local issues (Demuijnck & Fasterling, 2016; Meesters & Behagel, 2017; Parsons et al, 2014), instead of adhering to broader societal concerns (Parsons et al, 2014) and sustainable development objectives (Owen & Kemp, 2013). In contrast, Owen & Kemp (2013) claim that, what proponents provide for communities to obtain SLOs for their projects, largely does not comply with the requirements of these communities for granting SLOs (Owen & Kemp, 2013). Additionally, critiques are voiced about the engagement of marginalized groups. These groups are often not considered within the community engagement processes necessary for obtaining SLOs (Demuijnck & Fasterling, 2016; Meesters & Behagel, 2017: Owen & Kemp, 2013). Some academic also find that, because of the broad and intangible nature of the concept, it is not clear what requirements should be taken to obtain SLOs (Bice, 2014; Owen & Kemp, 2013; van de Biezenbos, 2018). This causes the initial aim, to empower local communities (Cooney, 2017; Prno & Slocombe, 2012), to fade (van de Biezenbos, 2018). Therefore, strategies for obtaining SLOs should not just be about managing local issue, reputation and risk. Rather, they should consist of emancipatory approaches (Parsons et al. 2014), through listening and responding to community expectations (Owen & Kemp, 2013) by making them full partners in governance of decision making (Meesters & Behagel, 2017).

Conceptual models of SLO

Thomson & Boutilier (2011) and Jijelava & Vanclay (2017; 2018)

Thomson & Boutilier (2011) propose a quantitative model of the SLO, displayed in Figure 1, that consists of four levels (withheld, acceptance, approval, and psychological identification) that represent the stances of different stakeholders within communities towards certain projects. These levels are divided by three boundaries: legitimacy, credibility and trustworthiness. Jijelava and Vanclay (2017;2018) expanded this model and transformed it into a qualitative framework.

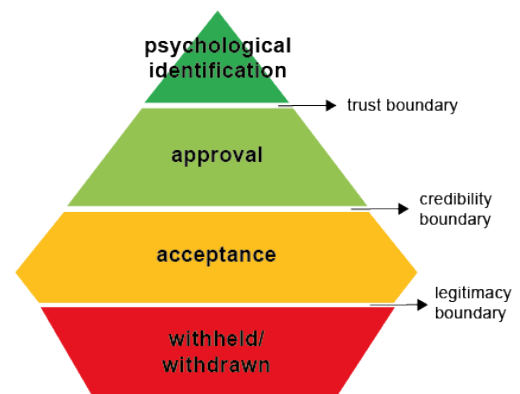


Figure 1. The model of SLO developed by Thomson & Boutilier (2011)

From Withheld to Acceptance: Legitimacy

Under the legitimacy boundary lies the level of withheld. In this stage there is an absence of legitimacy in the perception of a stakeholder, that will lead to a rejection of the project by that stakeholder. Occurrences like boycotts, blockades and legal challenges can indicate this level, although these occurrences can also be instigated by a small opposition (Thomson & Boutilier, 2018). Legitimacy can be seen as the base level of acceptance of projects, from the perspective of stakeholders within the communities, and is based within justly conducted decision-making procedures and fair distribution of benefits (Jijelava & Vanclay, 2017). In order for projects to exceed the legitimacy boundary and reach the level of acceptance, proponents need to establish legitimacy within multiple dimensions:

- *Legal and administrative legitimacy:* Considers whether the project has, in the perception of stakeholders adhered to the laws, regulations, (international) standards and procedures of decision-making in a reasonable and fair way (Jijelava & Vanclay, 2018). This dimension also links with the notion of procedural fairness proposed by Moffat & Zhang (2014).
- *Economic legitimacy:* Considers whether the benefits and compensations, that are provided to the (local) communities, are distributed fairly (Jijelava & Vanclay, 2018; Moffat & Zhang, 2014; Thomson & Boutilier, 2011) and outweigh the costs and/or burdens to these communities (Moffat & Zhang, 2014).
- *Socio-political legitimacy:* Is the perception that, the development positively influences well-being within the (local) communities, and that respect has been shown to the local context (Jijelava & Vanclay, 2018; Thomson & Boutilier, 2011). Additionally, the broad reputation of the proponents and exploration of alternatives are considered a factor within this dimension (Thomson & Boutilier, 2011). Furthermore, the perceptions of the communities whether they had access to all relevant information and whether they were heard and treated in a fair and reasonable manner, are also included as factors (Jijelava & Vanclay, 2018).

The dimensions within the legitimacy boundary can also be seen as a continuum with legal and administrative legitimacy being something that always should be required, regardless the perception of communities. Furthermore, Thomson and Boutilier (2011) find that economic legitimacy is at the base of acceptance from stakeholders and find that socio-political legitimacy also partly exceeds this level by influencing the approval-level. When the proponents adhere to all the dimensions within legitimacy-level a project should have reached the acceptance level. Physical indicators of this level according to Thomson & Boutilier (2018) might be the presence of lingering issues, presence of outside NGOs and watchful monitoring. `

From Acceptance to Approval: Credibility

To elevate the level of SLOs, from of acceptance to approval, the credibility boundary has to be crossed. Credibility is the actions-based reputation of projects and their proponents (Jijelava &

Vanclay, 2018) and can be seen as “a basic level of trust related to honesty and reliability” (Smith & Richards, 2015. p. 93). When the approval level has been reached communities perceive the proponents as ‘a good neighbour’ and have senses of pride in collaborative achievements (Thomson & Boutilier, 2018). The dimensions of credibility are the communities their perception of:

- *The proponents their commitment to social performance.* Jijelava & Vanclay (2017) and Vanclay et al. (2015) propose multiple indicators of social performance:
 - An effective assessment and consideration of all issues from the communities related to the project, including impacts on social infrastructure (Moffat & Zhang, 2014) and environmental impacts;
 - The design and implementation of monitoring programs;
 - Provision benefits to the community;
 - Acting in accordance with international social and environmental standards;
 - Showing openness, transparency and good governance;
 - Conducting effective community engagement.
- *The competence that project proponents have to act on promises made.* This entails that, without competence, a project and its proponents can not deliver on promises made to the communities, therefore limiting their reliability and truthfulness (Jijelava & Vanclay, 2017). Moffat & Zhang (2014) phrase this factor as ‘competence-based trust’.
- *Proponents their understanding of and respect for the local context* (Jijelava & Vanclay, 2018). In line with effective community engagement, to gain credibility, proper public participation with local representatives in decision-making should be conducted (Gunningham et al. 2006; Jijelava & Vanclay, 2018; Meesters & Behagel, 2017; Moffat & Zhang, 2014; Pro and Slocombe, 2014; Smits et al. 2017). Additionally, compensation should not be limited to just material, but should also be directed towards regional development with incorporation of social aspects in development (Jijelava & Vanclay, 2018; Vanclay, 2017).

The approval level is largely a manifestation of high levels of socio-political legitimacy and what Thomson & Boutilier (2011) describe as ‘interactional trust’. This means that the project proponents, in the perception of the communities, “engage in mutual dialogue and exhibit reciprocity in their interactions” (Thomson & Boutilier, 2011. p 4).

From Approval to Psychological identification: trust(worthiness)

The highest form of the SLO is psychological identification. Between this level and the approval level lays the trustworthiness boundary. Indicators of trust can be the presence of political support, co-management of activities with other stakeholders and cooperation against criticism from communities (Thomson & Boutilier, 2011; Thomson & Boutilier, 2018). Jijelava & Vanclay (2018) state that on this level stakeholders see proponents as partners in a developed long-term relationship and Thomson & Boutilier (2011) call this institutional trust. This trust is indicated by the following factors:

- *The quality of interaction between the project and the communities.* This has been identified by Moffat & Zhang (2014) to be a decisive factor in perceptions of trust and acceptance of a project.
- *The active involvement of communities within the decision-making process and monitoring* (Dare et al. 2014; Jijelava & Vanclay, 2018).
- *The understanding of the project proponents that there is not one unified community, but a range of communities with different opinion and views* (Dare et al. 2014; Jijelava, 2019).
- *Attention has been paid to marginalized groups within the communities.* According to van der Ploeg & Vanclay (2017) this especially regards disabled persons, elderly, women and Indigenous people.
- *That the proponents have shown a regard for these factors over a long-time period.*

Moffat & Zhang (2014) and Zhang et al. (2015)

In their model, displayed in Figure 2, Moffat & Zhang (2014) place trust central in communities their acceptance and approval of projects. This trust is influenced by the impacts on social infrastructure, contact quality and quantity and procedural fairness. In later research contact quantity was removed as factor. On multiple national levels Zhang et al. (2015) found that distributional fairness, procedural fairness and confidence in governance are the main factors of trust in mining as industry, which influences the overall acceptance of mining (Figure 3). Although both the models were developed for mining, Moffat et al. (2015) find the models also suitable for other industries.

Local model of SLO

Impacts on social infrastructure relates to the (social) impacts of projects and how they are managed and mitigated by the project proponents. Following this, Moffat & Zhang (2014) claim that the difference between the extent to which stakeholders experience the impacts compared to what they expected beforehand is crucial within the overall acceptance of the project. If this difference is high, then trust in the project and proponents will go down, and when impacts seem to be less than expected, this trust will rise.

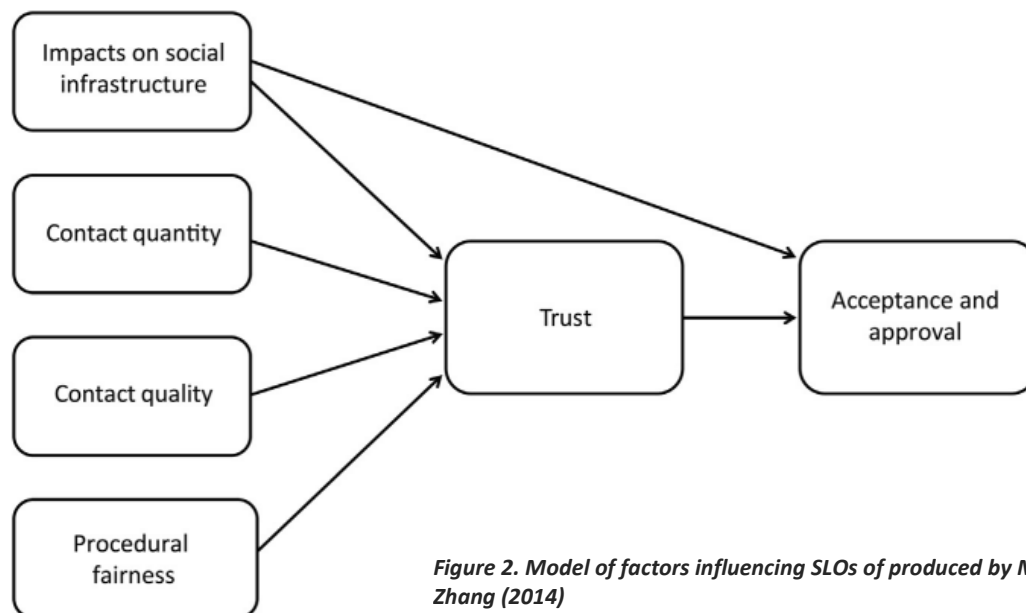


Figure 2. Model of factors influencing SLOs of produced by Moffat & Zhang (2014)

Moffat & Zhang (2014) see *quality of interaction* as another vital factor within building trust and eventually acceptance and approval of projects. They base this factor on the relationships between the project and the stakeholders in the related communities. *Procedural fairness* considers the perceptions of stakeholders if they: “*have had a reasonable voice within the decision-making process*” (Moffat & Zhang, 2014. p 63). This is also related to the role of governments and how they manage public participation, as an important part within SLO practice (Gunningham et al. 2006; Prno, 2013; Zhang et al. 2018). Moffat & Zhang (2014) add that acceptance will increase when the communities their concerns are addressed accordingly, even if the eventual decision that are made go against their standpoints.

SLO at the International, National and Industry levels

In their model of (inter)national acceptance of mining, Zhang et al. (2015), along with Parsons et al. (2014) and Prno & Slocombe (2014), find that the overall reputation of an industry also influences acceptance of local activities. In reverse, local activities, can also influence SLOs on a broader scale (Prno & Slocombe, 2014; Zhang et al., 2015), for instance through severe impacts of one project. Distributional fairness, procedural fairness and confidence in governance are the main factors within

trust of a certain industry and subsequently the acceptance of mining (Zhang et al., 2015).

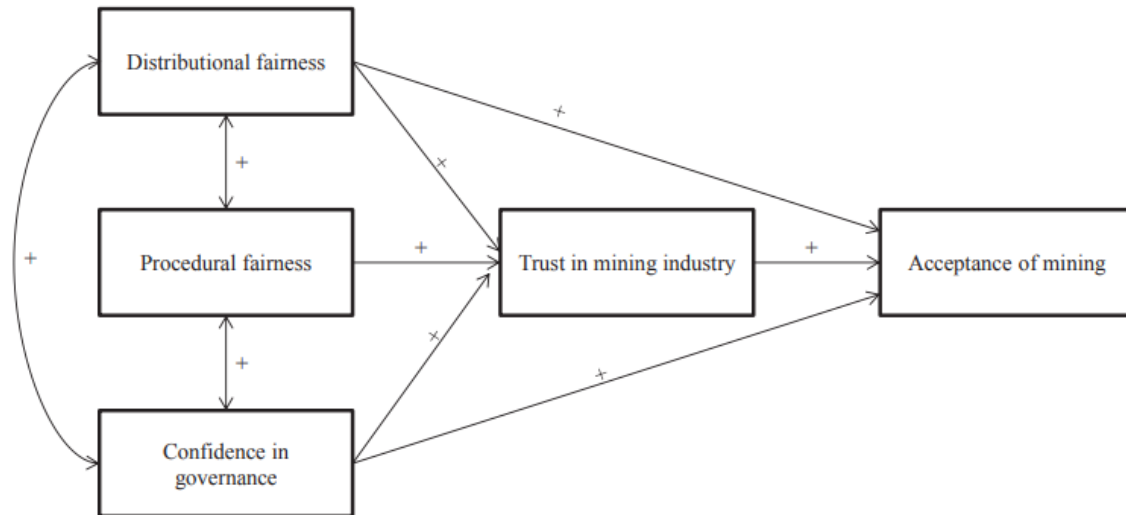


Figure 3. The model of SLOs on (inter)national and industry-wide scale, developed by Zhang et al. (2014).

Distributional fairness encompasses the perception of the public that benefits of the project are distributed in a fair way. Multiple other sources also see distributional fairness as an important factor within obtaining SLOs (Boutilier et al. 2012; Hall et al. 2012; Jijelava & Vanclay, 2018; Meesters & Behagel, 2017; Smits et al. 2017). Lacey et al. (2017) applied the model to a local case of a goldmine in Waihi New Zealand and confirmed that distributional fairness is also an important factor of trust and acceptance of projects on a local scale. The factor of *procedural fairness* is the same factor as within the local model of SLO proposed by Moffat & Zhang (2014). *Confidence in governance* is the perception of the public that governments hold projects and their proponents accountable for their actions and that their arrangements of rules, regulations and law are adequate in preventing communities from harmful impacts (Zhang et al. 2015). In addition, the level of public participation provided to communities by governments also influences the level of trust in the governance and subsequently overall acceptance and approval of the project. Further, the financial arrangements that governments have with some projects, either through tax schemes or direct deals, are an additional factor contributing to confidence in governance. When governments receive significant revenues from certain activities, trust that communities have their impartiality can be inhibited. Moffat & Zhang (2014) find trust an important factor of SLO and distinguish three main elements. The first is that the project shows integrity, which entails that the proponents act accordingly with a certain set of principles. The second component is the perception of the communities that the project and the proponents are competent to manage the issues that the communities voice. Finally, trust is made up of the rate that the expectations of the communities are met by the projects' proponents.

Prno & Slocombe (2014)

Prno & Slocombe (2014) developed a systems-based model of factors that influence SLOs outcomes in mining, see Figure 4. This framework is made up of four components: system characteristics, multi-scale variables, local variables, and SLO outcomes. The underlying variables can change according to the local context of projects, and these variables influence each other through feedback mechanisms.

System characteristics

System characteristics consist of context, change, uncertainty, emergence, cross-scale effects and feedbacks. *Context* consist of the specific variables inherent to different places and situations, which is viewed by many as an important factor in SLOs (Boutilier et al. 2012; Corvellec, 2007; Franks &

Cohen, 2012; Gunningham et al. 2006; Hall et al. 2012; Jijelava & Vanclay, 2018; Lacey et al. 2017; Nelsen & Scoble, 2006; Owen & Kemp, 2013; Prno, 2013; Thomson & Boutilier, 2011; Vanclay, 2017; van de Biezenbos, 2018). *Change* and *uncertainty* encompass unforeseen variables and unforeseen impacts that can influence the outcomes of SLOs. An example of this are the earthquakes induced by gas extraction in the Netherlands that eroded the SLOs of the company NAM (van der Voort & Vanclay, 2015). *Emergence* is the notion that SLOs are not built linearly but emerge as a consequence of multiple small events. *Cross-scale effects* are effects that are temporal and geographical, that can influence SLOs, because communities' perceptions are tied to incidents in the past and in other regions. *Feedbacks* refer to the influence that the different components and variables can have on each other.

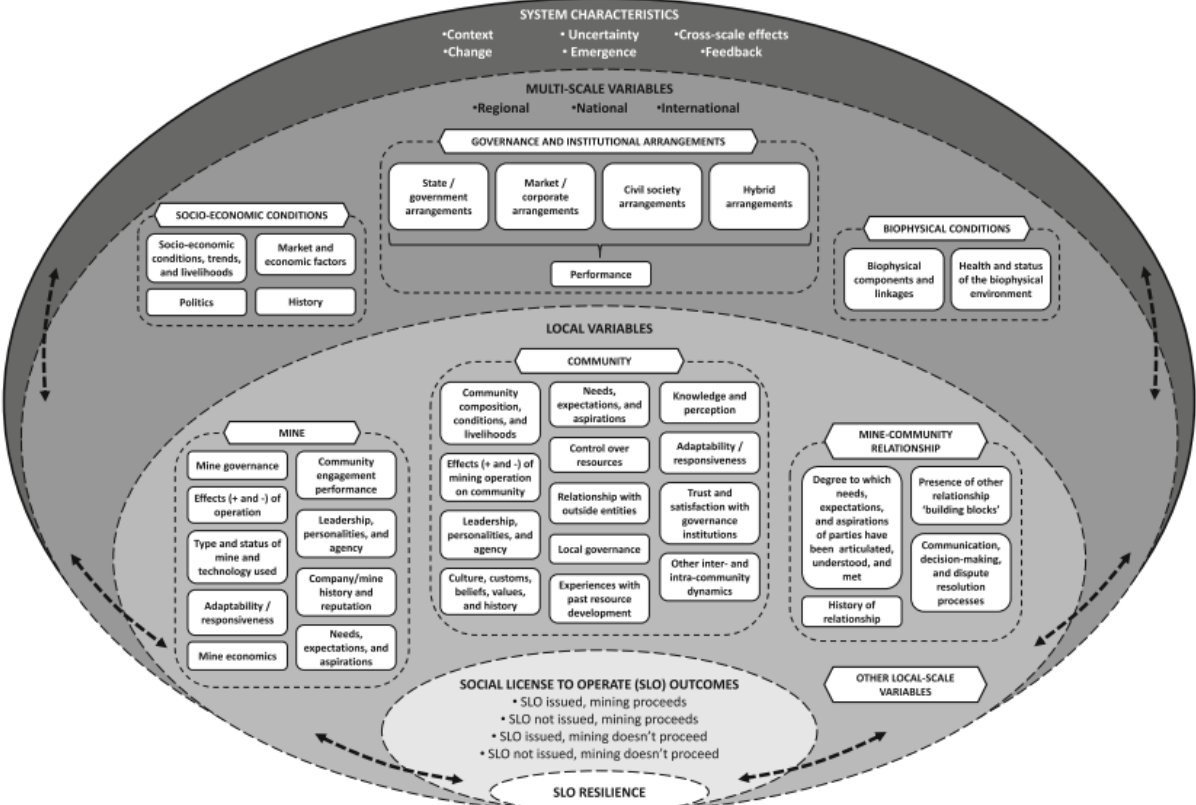


Figure 4. Systems-based model of SLOs developed by Prno & Slocombe (2014)

Multi-scale variables

Multi-scale variables are variables that are present on regional, national and international scales, and that can influence variables within the local context. This component consists of three sub-categories: Socio-economic conditions, governance and institutional arrangements, and biophysical conditions. *Socio-economic conditions* considers variables like global markets and national and regional economic policies that can influence local conditions, like decreases in revenues. Existing laws, rules and regulations and more informal arrangements, like international standards, are examples that make up *governance and institutional arrangements*. An important part of this is the extent of public participation provided by the relevant governments (Gunningham et al. 2006; Jijelava & Vanclay, 2018; Prno, 2013; Zhang et al. 2018). The biotic and abiotic factors outside of the human sphere, that influence SLOs, are variables that encompass the *biophysical conditions*.

Local variables

Local variables are the variables related to projects themselves, communities, and relationships between projects and communities. These are the variables that can be considered as the most important at the local scale, while other local variables can be placed under context. *Project related variables* are the performance of proponents on governance structures; their (social) competence

and reputation. In addition, leadership and personalities within projects are important for this variable. However, most importantly is the proponents' performance in community engagement, which is widely endorsed in SLO-literature (Dare et al. 2014; Cooney, 2017; Hall et al. 2015; Jijelava & Vanclay, 2018; Meesters & Behagel, 2017; Owen & Kemp, 2013; Rodhouse & Vanclay, 2016; Vanclay, 2017; van de Biezenbos, 2018; Zhang et al. 2018). *Communities* also contain important variables as 'issuers' of SLOs. Their perceptions, needs, expectations and aspirations make up this component, but also past experiences, resilience, knowledge, cultures and relationships with other communities. Between project related variables and communities lay the *project-community relationships*. Important parts within these relationships are the degree in which expectations of communities are met, but also stability factors of trust and dialogue. History of relationships and proper communicative processes also make up important factors.

SLO outcomes

Prno & Slocombe (2014) distinguish four states of SLO outcomes: One, where SLOs are issued and projects proceed and second where SLOs are not issued and projects do proceed. The third state is where SLOs are issued and projects do not proceed and the fourth is where SLOs are not issued and projects do not proceed. These outcomes are influenced by the variables of SLOs and do not always comply with the wants and needs of communities. The variable of resilience also relates to systems and consists of the capability to be resilient or adaptable to changes within variables influencing SLOs' outcomes. Prno & Slocombe (2014) state that resilience can be achieved with higher levels of SLOs obtained, like approval and psychological identification.

Overlapping and additional factors

The four models show some similarities but also give additional factors of SLOs to each other. Economic legitimacy (Thomson & Boutilier, 2011) and distributional fairness (Moffat & Zhang, 2014) show for instance a lot of similarities as do legal/administrative legitimacy and procedural fairness. Contact quality (Moffat & Zhang, 2014) links with effective community engagement (Thomson & Boutilier, 2011) and project-community relationships proposed by Prno & Slocombe (2014). Furthermore, impacts on social infrastructure (Moffat & Zhang, 2014) are similar to social impacts and can be considered under the variable of commitment to social performance proposed by Thomson & Boutilier (2011) and project-community relationships presented by Prno & Slocombe (2014). Confidence in governance is a factor that Moffat & Zhang (2014) and Prno & Slocombe (2014) both assert. However, Prno & Slocombe (2014) broaden this factor to governance and institutional arrangements. Additionally, context is considered an important factor by both Thomson & Boutilier (2011) and Prno & Slocombe (2014). Prno & Slocombe (2014) also add other system variables to their model. Although, context is also present within local and multi-scale variables, like communities and socio-economic conditions. Governance and institutional arrangements as variable proposed by Prno & Slocombe (2014) also encompasses social-political legitimacy and commitment to social performance from the model of Thomson & Boutilier (2011). Project related variables can be associated with community engagement, social performance and legal/administrative legitimacy proposed by Thomson & Boutilier (2011), but also link with competence within the model of Moffat & Zhang (2014) and Thomson & Boutilier (2011). Community and project relations from Prno & Slocombe (2014) their model overlap the most with the two other models and can almost be interchanged with either one. The model of Prno & Slocombe (2014) does add some extra variables: biophysical conditions and SLO outcomes, especially resilience. Furthermore, they provide a departmentalisation of some of the contextual factors.

Theoretical Framework

Most of the overlapping factors can be placed within the model of Thomson & Boutilier (2011), adjusted by Jijelava & Vanclay (2017; 2018), as representation of the interactions between projects

and communities. Therefore, this model is placed within centre of the theoretical framework. Systems characteristics proposed by Prno & Slocombe (2014) are placed within the left top corner and are influencing factors upon the SLO continuum of Thomson & Boutilier (2011). Context variables on the different scales also influence the factors within this continuum and are placed in the left corner of the model. Subsequently, these variables within the model lead to certain SLO outcomes as proposed by Prno & Slocombe (2014) that have different scales (Dare et al. 2014) and certain amounts of resilience (Prno & Slocombe, 2014). Over time and through feedbacks, outcomes of SLOs influence both the context and systems characteristics and therefore, the interactions between the project and communities (Prno & Slocombe, 2014). The theoretical framework is provided in Figure 5.

Theoretical Framework of the Social Licence to Operate

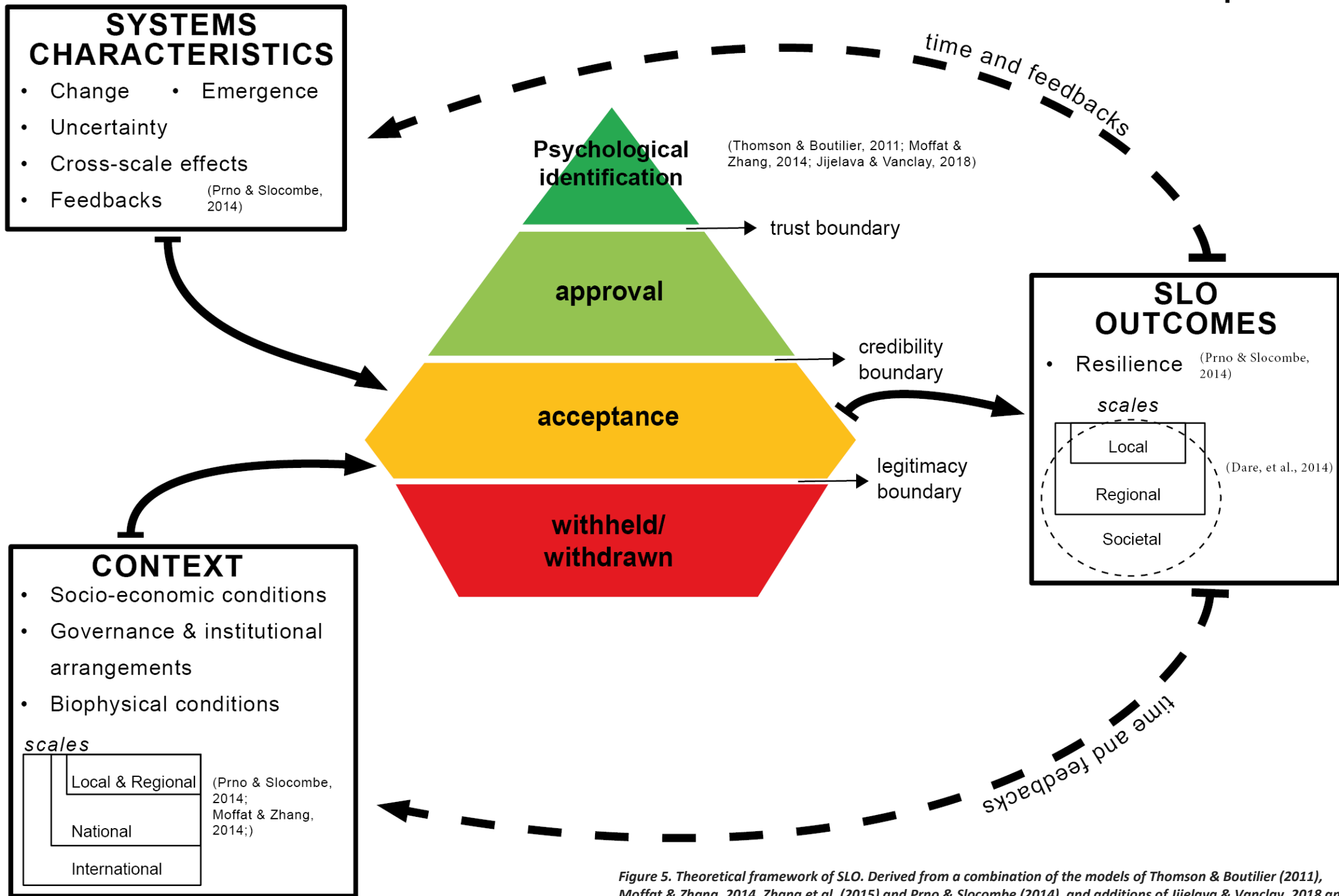


Figure 5. Theoretical framework of SLO. Derived from a combination of the models of Thomson & Boutilier (2011), Moffat & Zhang, 2014, Zhang et al. (2015) and Prno & Slocombe (2014), and additions of Jijelava & Vanclay, 2018 and Dare et al. (2014)

Additional concepts related to SLO

Within the theoretical framework, the various factors contributing to SLOs are identified. Important factors that emerged from this were social impacts, participation, community engagement, stakeholders, communities and governance. Because of their importance within SLOs, these factors are explored more thoroughly within this paragraph.

Social impacts and social impact assessment

Impacts caused by projects and how these impacts are assessed and considered have a great influence on the SLOs given by stakeholders.

Social impacts

Social impacts can be simply defined as everything that affects people that is caused by or linked to a project (Vanclay et al., 2015). This can be either about perceptions or physical impacts on individuals, families/households, social groups, communities or societies (Vanclay, 2002). Both Slootweg et al. (2001) and Vanclay (2002) in their conceptualisation of social impacts make a distinction between social change processes and social impacts. Social impacts are what is truly experienced, by individuals, communities, and/or other social configurations, as impacts. Social change processes can be seen as the mechanisms that lead to these social impacts (Vanclay, 2002; Slootweg et al. 2001). As example, a declining population is not an impact itself, but this process can lead to multiple different social impacts, like a decline in local facilities. Vanclay (2002) stresses that, although commonly forgotten in SIA literature, impacts can be negative, but also positive. Slootweg et al. (2001) further discuss the concept of a 'social filter'. This is a filter that filters down certain potential impacts because of the particular characteristics of the social setting. For instance, a community with a lot of different industries and job opportunities can handle a closure of a factory better than a community that is largely depended on that factory for their labour opportunities. A distinction can be made between direct and indirect social impacts. Indirect impacts are the result of changes of and impacts on the physical environment. Conversely, direct impacts are the result of social change processes that are directly caused by a project (Slootweg et al. 2001). Furthermore, cumulative impacts can occur when change processes or impacts of projects strengthen other effects (Franks et al., 2012).

Social impact assessment

Social impact assessment (SIA) is defined by Vanclay (2003, p 1.) as: *'the monitoring and managing of the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions.'* The International Association for Impact Assessment (IAIA) proposes four ongoing phases of social impact assessment that can be seen as a standard for practice (Vanclay et al. 2015). These are:

- *Understanding the issues:* in the first phase of projects and their areas of influence are analysed. This includes community profiling, assembling of baseline data and initial engagement.
- *Predicting, analysing and assessing the likely impact pathways:* this consists of analyses of impacts and stakeholders affected. Alternatives to the project are also considered in this phase.
- *Development and implementation of strategies:* This phase consists of addressing the issues and impacts in forms of compensation and mitigation.
- *The design and implementation of monitoring programs:* within the last phase monitoring plans are implemented to analyse and evaluate the impacts and management plans (Vanclay et al. 2015).

Governance and governments

Governance and confidence in governance is an important factor in SLOs, according to Moffat & Zhang (2014) and Prno & Slocombe (2014), and high levels of SLOs can positively influence the

issuing of legal licences by governments (Gunningham et al. 2004; Hall et al. 2015; van de Biezenbos, 2018). On the other hand, (local) governments can also deny these licenses when there is a lot of community resistance. Not only by this form of agency governments are able empower communities, but also by providing adequate public participation opportunities within the decision-making of renewable energy projects (Bell et al. 2005; Blomberg Bingham et al. 2005; Colton et al. 2016; Hall et al. 2015; Jami & Walsh, 2014). This also relates to procedural fairness (Moffat & Zhang, 2014) and legal and administrative legitimacy (Thomson and Boutilier, 2011) as a key components at the base of SLOs. Because governments are the issuer of licences, they are the party that have to ensure that procedures are conducted fairly and justly in order to obtain trust and acceptance from the communities (Zhang et al. 2015). This trust in government however is often lacking (Boutilier, 2019; Prno & Slocombe, 2014; Thomson & Boutilier, 2011; Zhang & Moffat, 2015), and is one of the reasons why a SLO approach is adopted in some industries (Boutilier, 2019; Cooney, 2017; Prno & Slocombe, 2014; Thomson & Boutilier, 2011). Another reason why this notion of trust can be stifled, is the issue of financial interest of (local) governments in certain development. This can hamper the perception of impartiality of the governments involved and therefore the acceptance of projects (Bice, 2014). Local communities often find that they lack agency from governments (Boutilier, 2019; Prno & Slocombe, 2014; Thomson & Boutilier, 2011; Zhang & Moffat, 2015), however or because of this a trend is discernible that local communities are demanding more influence in decision-making (Prno & Slocombe, 2014; Smits et al. 2017), for instance via public participation and community engagement processes. Thus, a case can be made that (local) governments have an important role and responsibility within SLOs. This should be a mediating role between the proponents and the communities (Moffat & Zhang, 2014).

Community engagement and public participation

Central to SLOs is the engagement of communities that are affected by or can affect projects (Cooney, 2017; Dare et al. 2014; Hall et al. 2015; Jijelava & Vanclay, 2018; Meesters & Behagel, 2017; Owen & Kemp, 2013; Rodhouse & Vanclay, 2016; Vanclay, 2017; van de Biezenbos, 2018; Zhang et al. 2018), because it provides opportunities for good, positive interaction that builds credibility and ultimately trust (Moffat and Zhang, 2014; Prno, 2013). The concept of community engagements also encompasses public participation in decision-making, which is seen as an important factor in obtaining SLOs (Gunningham et al. 2006; Jijelava & Vanclay, 2018; Prno, 2013; Zhang et al. 2018).

Community engagement

Dare et al. (2014) distinguish two forms of community engagement, operational community engagement and strategic community engagement. Operational community engagement relates to the engagement with stakeholders and communities that are directly impacted by a project. Strategic community engagement regards stakeholders that are not directly impacted by projects but that can potentially influence projects (Dare et al., 2014). Simply, operational engagement considers the local communities and the strategic engagement broader society. Furthermore, community engagement is more than just participation in decision-making. It is about communication and understanding of the local context (Jijelava & Vanclay, 2018; Meesters & Behagel, 2017; Prno, 2013), but also about providing benefits that aid development of these communities (Jijelava & Vanclay, 2018).

Public participation

The concept of public participation is the rate to which the public, especially the local communities, are involved within the decision-making process. Although there is a large interest in this subject, Arnstein (1967) provides a practical framework to analyse the rate of participation. As a metaphor for the rate public involvement in decision-making, Arnstein (1967) proposed the ladder of citizens participation. She distinguishes eight increasing levels of participation starting with: 1. *Manipulation*, followed by 2. *therapy*, 3. *informing*, 4. *consultation*, 5. *placation*, 6. *partnership*, 7. *delegated power*

and 8. *citizen control* (see Figure 6). The first two levels are labelled as non-participatory and Level 3 until 5 are labelled as tokenism. In these stages the public does have a say within the decision-making process but is not equal towards the proponents. The highest levels, ranging from partnership to ultimate citizen control, do provide citizens with power in decision-making (Arnstein, 1967). This makes that, in order to empower (local) communities and to obtain SLOs, it is important that higher levels of participation are provided (Meesters & Behagel, 2017). An increase in levels of participation can be linked to a shift in spatial planning from technical top-down approach to a communicative, collaborative bottom up approach (Allmendinger, 2017; Lane, 2005; de Roo & Silva, 2010). A communicative approach is seen by de Roo & Silva (2010) as the most suitable approach for situations characterized by high levels of complexity, uncertainty and intersubjectiveness, for instance the development of renewable energy projects. Therefore, to obtain SLOs for renewable energy projects, a communicative planning approach should be taken with high levels of participation (Hall et al. 2012).

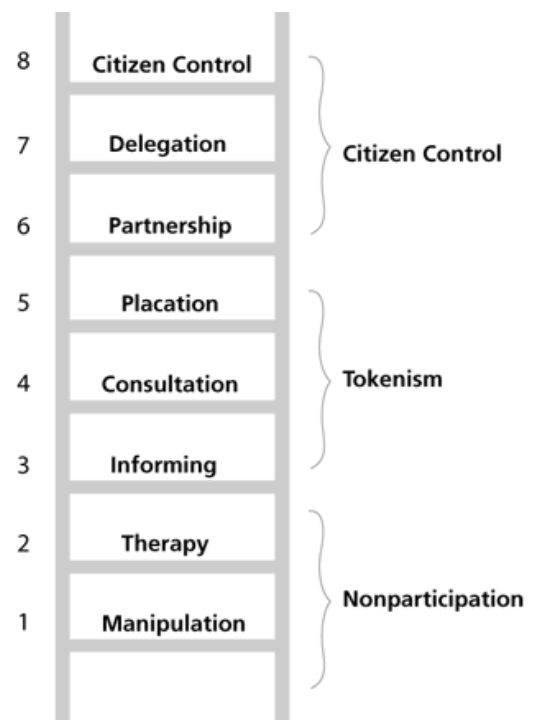


Figure 6. Ladder of citizens participation by Arnstein (1967)

Stakeholders, communities and levels of SLOs

SLOs are about communities and projects and the stakeholders where these communities are made up of. However, what exactly entails these communities, what groups they are made up of and the extent to which these different groups have a say within the decision-making, is not always clear.

Within SLO literature, the definition of stakeholders by Freeman is used most frequent (Moffat & Zhang, 2014; Prno & Slocombe, 2014; Thomson & Boutilier, 2011). Freeman states that a stakeholder “is any group or individual that can affect or can be affected by the realization of an organization’s purpose” (Freeman, 2007 p. 12). Considering this, in SLOs, a stakeholder is a group or person that is affected by or can affect a project. Freeman (2007) also makes a distinction between primary and secondary stakeholders. Primary stakeholders make those groups or persons that are directly affected, while secondary stakeholders are the groups or persons that are indirectly affected or that can affect other primary stakeholders. For instance (local) communities are regarded as primary and social interest groups (NGOs) as secondary (Freeman, 2007).

The importance of these stakeholders can be based on the power they have, their legitimacy and their urgency (Mitchell et al. 1997). Within the communities surrounding projects these concepts can be translated into:

- The extent the stakeholder is affected by the project (urgency) and to what extent their claim of being affected is legitimate.
- The power that a stakeholder has to affect a project

Local communities near projects most likely have the highest extent of being affected by projects, like renewable energy, making them primary stakeholders. Governments and NGOs possibly have a higher influence on projects, however cases have shown that local communities also can have a lot of power in affecting projects (Boutilier, 2014; Cooney, 2017; Davis & Franks, 2011; Jijelava & Vanclay, 2018). Additionally, multiple academic find that local communities should have the power or at least more power to affect projects (Boutilier, 2014; Cooney, 2017; Demuijnck & Fasterling, 2016;

Meesters & Behagel, 2017; Owen & Kemp, 2013; Prno & Slocombe, 2014; Smits et al. 2017; van de Biezenbos, 2018).

Although it should be clear that SLOs not only include local communities, but also stakeholders from broader scales (Dare et al. 2014; Hall et al. 2015; Jijelava & Vanclay, 2018; Parsons et al. 2014; Prno & Slocombe, 2014; Smits et al. 2017; Thomson & Boutilier, 2011), local communities are seen as the most important stakeholders, because of their proximity to projects and the extent of being affected by them (Gunningham et al. 2014; Prno & Slocombe, 2014; Thomson & Boutilier, 2011; van de Biezenbos, 2018). Local communities, along with regional communities, can be categorized as *communities of place* whereas other stakeholders, like NGOs as *communities of interest* (Dare et al. 2014; Franks & Cohen, 2012). Alongside these different communities, different scales of SLOs emerge (Dare et al. 2014; Prno & Slocombe, 2014). Dare et al. (2014) propose a framework of these scales distinguishing three: local, regional and societal, along with two categories of communities of place and interest. Stakeholders do not have to exclusively belong to one scale or category, they can be in several. A schematic overview of stakeholders within SLO is displayed in Figure 7.

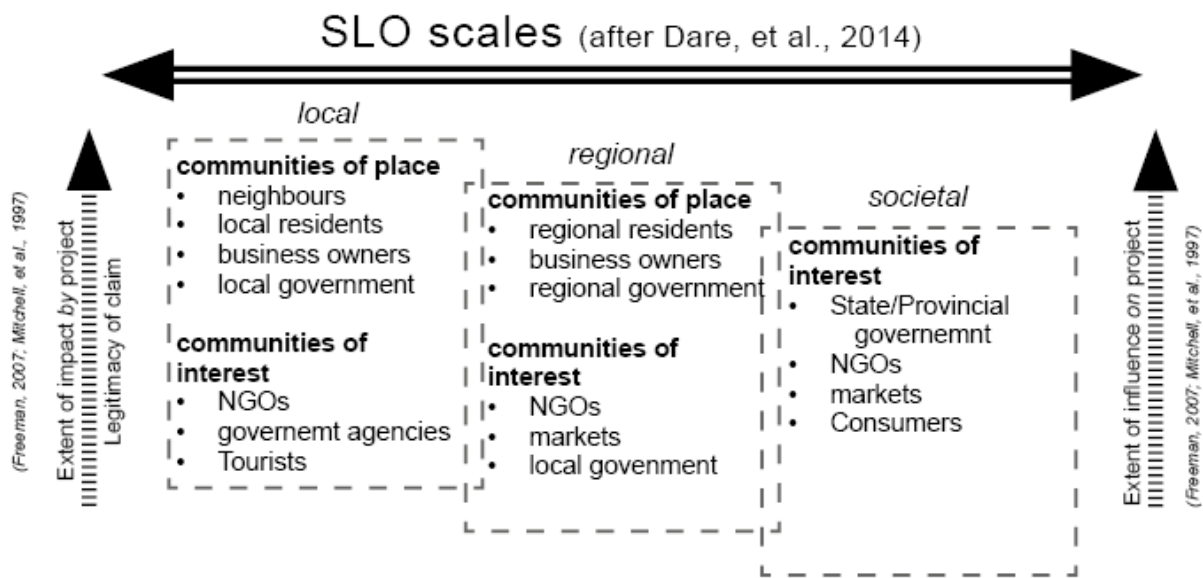


Figure 7. Framework for determining stakeholders and communities related to projects and their SLOs. Largely derived from Dare et al. (2014), with additions from Freeman (2007) and Mitchell et al. (1997).

Methodology

This chapter contains a description of the approach and methods taken along with a description of what data was analysed and how. An ethical consideration of these methods is also included in the chapter.

Research approach

Within research on the SLO, both quantitative and qualitative approaches are used. However, the SLO is regarded as an intangible concept (Bice, 2014; Franks & Vanclay, 2013; Nelsen & Scoble, 2006; Parsons et al. 2014) that is hard to measure (Bice, 2014; Nelsen & Scoble, 2006; Parsons et al. 2014) and to quantify (Lacey et al. 2017). The concept is also based within the perception of (local) communities (Franks & Cohen, 2012; Jijelava & Vanclay, 2018; Moffat & Zhang, 2014; Nelsen & Scoble, 2006; Owen & Kemp, 2013; Prno & Slocombe, 2014; Thomson & Boutilier, 2011) and context makes up an important part within the SLO (Jijelava & Vanclay, 2018; Meesters & Behagel, 2017; Prno & Slocombe, 2014; Thomson & Boutilier, 2011). From this it can be derived that SLOs are based within intersubjectivity and the experiences, needs and aspiration of the related communities. This makes the concept of SLO, within an interpretive paradigm, a socially constructed concept. According to Hay (2016), a qualitative approach is most suitable for researching societal structures, perceptions and experiences of groups and individuals. Therefore, to research how renewable energy projects can gain SLOs, a qualitative research approach is seen as most suitable. Because the SLO is about acceptance of certain projects, activities and developments, case studies are often used to test the applicability of the concept (Jijelava & Vanclay, 2017; 2018) or to develop theory (Dare et al. 2014; Moffat & Zhang, 2014; Prno & Slocombe, 2014; Thomson & Boutilier, 2011; Zhang et al. 2015). Within this research, a case study approach was undertaken to test the applicability of the SLO to renewable energy projects, especially solar farms, and to develop theory on how these renewable energy projects can obtain SLOs from the associated communities.

Research structure

The research was structured based on the theoretical framework presented in Figure 5 (page 12) and the additional concepts related to SLOs. First, the context of the case was researched based on three sub-categories propped by Prno & Slocombe (2014): socio-economic conditions, governance & institutional arrangement, and biophysical conditions. Second, a study was done the extent to which the case had obtained and maintained SLOs from the communities. The stakeholders in this case were determined with the framework depicted in Figure 7 (page 16). Social impacts and their mitigation efforts were analysed with the frameworks of Vanclay (2001) and Sloodweg et al. (2001) and the rates of participation provided were analysed based on the ladder of Arnstein (1967). Within the last step, it was analysed how the case deviated from theory and it was analysed what factors were decisive for the either gaining SLOs or in not obtaining SLOs. These factors provided insight in how approaches for obtaining SLOs for renewable energy projects can be improved.

Selection of case

For the selection of a suitable case, criteria were developed. Foremost, the case had to be a renewable energy project. Since wind-energy already had academic interest related to SLO (Corscadden et al. 2012; Corvellec, 2007; Hall et al. 2012; Hall et al. 2015; Lansbury Hall & Jeanneret, 2015) other renewable energy technologies were sought to broaden the SLO knowledge within the renewable energy industry and academia. For accessibility reasons, the Northern-Netherlands was chosen as geographic region in which the case had to be located. Within this region, cases of two other potential sustainable energy technologies were present, namely bio-fermentation plants and solar farms (RVO, 2019). From these two options the most contested option was chosen because of applicability of the SLO concept. Bio-fermentation plants within the Netherlands do experience some debates and contestedness (de Mik, 2017; Omroep Zeeland, 2018; Veltman, 2017), however the

protests numbers relative to the number of bio-fermentation plants is lower than in the case of solar farms. And because, solar farms have sparked much debate and protest within the north of the Netherlands (Atsma, 2019; DvhN, 2019; DvhN, 2019a; Meijer, 2018; van den Eerenbeemt, 2018), they were chosen as most suitable renewable energy technology.

The suitability of a solar farm case was based on three criteria. First, it had to be relatively large, land-based and implemented, so it would form a distinguishable feature in the landscape. Second, the solar farm needed to have some level of contestation, for instance caused by the presence of multiple opposing stakeholders within the vicinity of the project. Third, the project had to be accompanied by some level of community engagement and public participation in order to analyse the effectiveness of this engagement as a crucial factor within SLOs. The solar farm on Ameland provided a suitable case that matched these criteria, because it is a 10-hectare, land-based solar farm that was completed in 2017. A certain level of contestation was shown within multiple legal objections and news articles. The proponents also had community engagement strategies by providing financial participation and deliberation moments with different stakeholders. Therefore, Zonnepark Ameland was chosen as the case to be studied within this research.

Research methods used

Within the qualitative research approach, two types of qualitative research were applied within the case study, namely oral and textual. Interviews mainly covered the oral part and document analyses the textual part.

Documents and other textual data

Bowen (2009) assigns great value to document analyses in case study research and data triangulation. As a method, it can provide information about context, input for questions within interviews, supplementary research data and a means of tracking change and development. It has been applied within multiple case studies within SLO research (Hall et al. 2015; Jijelava & Vanclay, 2017; Prno, 2013; Prno & Slocombe, 2014; Smits et al. 2017). In addition, documents as data provide broad coverage, exactness of data, stability and are not altered by the researcher or the research process. They also provide more data in less time (Bowen, 2009; Yin, 1994). In contrast, this data can have a low level of detail and the selection of the data by the researcher can be biased (Bowen, 2009). Within the case study of Zonnepark Ameland, document analysis provided data for multiple purpose: 1) to provide contextual data of the island of Ameland and the case of Zonnepark Ameland; 2) to give insight in the opinions of stakeholders within the communities related to the case; and 3) to give insight in the process and procedures that were taken by the proponents, governments and other organisations involved in the project. In Table 1, a list is provided with documents that were used extensively as data sources. Other documents that were used included media reports, proceedings, minutes of hearings, debates and other meetings. Messages and comments on social media covering the project were also analysed, because social media platforms are frequently used for protest actions and debate (Hanna et al. 2015). The data was searched using the Google search engine, LexisNexis and the database of Municipality of Ameland.

Table 1: Overview of used documents and other textual sources.

Document or other textual source	Author/publisher	Used for
Ruimtelijke onderbouwing Zonnepark Ameland ²	Rho Adviseurs, 2014	Contextual data Insight in opinions Process and procedures
Legal objections against the project	Multiple	Contextual data Insight in opinions Process and procedures
Database council meetings of Gemeente Ameland	Gemeente Ameland, 2019c	Contextual data Insight in opinions Process and procedures
Weerstand tegen Zonneparken (master thesis)	Zomerdijk, 2018	Contextual data Insight in opinions Process and procedures
Informatie memorandum AEC	AEC, sd	Contextual data Process and procedures
Language Change on the Dutch Frisian Island of Ameland	Jansen, 2010	Contextual data
Website of Duurzaam Ameland (https://www.duurzaameland.nl/)	Duurzaam Ameland, 2019	Contextual data Process and procedures

Interviews

Interviews are a common method within qualitative research and have the purpose to elicit information or expressions of opinion or belief from another person or persons. As a method, they are valuable for investigating complex behaviours and motivations, and for the collection of diversity of meanings, opinions and experiences (Dunn, 2010). Within this research, the aim of the interviews was to provide contextual data and insight into the processes and procedures that were undertaken, but mainly to provide insight into the opinions of the stakeholders related to Zonnepark Ameland and the processes leading to the realisation. The aim was to conduct semi-structured interviews with the stakeholders within the case. However, due to research fatigue, participants or phenomena being researched to much (Clark, 2008), was experienced by some participants. Additionally, there were issued of time constrains and communication deficits and therefore other forms of interviews were conducted. For instance, interviews via phone, minuting phone conversations and sending questions via email. Participants for the interviews were purposefully sampled to gain information-rich cases (Baxter & Eyles, 2004) and were chosen based on a preliminary stakeholder inventorisation of the case. Both advocates and opponents were actively sought for the interviews to gain a perspective of the debates related the project. In some cases, snowball-sampling was applied to find additional participants. The number of interviews depended on occurrences of redundancy and saturation of provided information (Baxter & Eyles, 2004). In Table 2 a list of the interviews held is provided. The interview data from a 2018 socio-spatial planning master thesis of Zomerdijk (2018) on the same case was also used.

² A 'Ruimtelijke onderbouwing' (spatial substantiation) is a mandatory document that has to be provided by the initiator of a development in order to obtain a permit for deviating from a zonal plan from the relevant government(s). It has to include a description of the development, how the development adheres to laws and regulations and impacts of the development on environmental factors and substantiation of societal and economic feasibility (Rijksoverheid, 2018). These documents are publicly available on the site: www.ruimtelijkeplannen.nl

Table 2: interviews taken with date and mode

Who	When	Mode
Zweefvliegclub Ameland representative	09-10-2019	Telephone
Airport Ameland representative	09-10-2019	Telephone
Local resident opposed	10-10-2019	Mail
Camping Roosdunen representative	15-10-2019	Telephone
Local resident near the project	01-11-2019	Face-to-face
AEC (Amelander Energy Cooperatie); J. Kiewiet	06-11-2019	Face-to-face
Municipality of Ameland; L. van Tiggelen	06-11-2019	Face-to-face
Eneco	19-11-2019	Telephone
Natuurwerkgroep Ameland	29-11-2019	Face-to-face
VVV Ameland	03-12-2019	Telephone

Data analysis

Both the textual data and transcripts of the oral data were analysed through coding in *Atlas.ti*. For the coding, the analyses scheme of five coding steps proposed by Stoffelen (2019) was used. Added to this scheme was a preliminary analysis that consisted of skimming documents and other textual sources (Bowen, 2007) in order to identify preliminary codes and themes (Cope, 2010). In the first step of the coding process, descriptive codes were assigned to the texts. These codes were not derived from theory, but from the data itself (Cope, 2010; Stoffelen, 2019). After this first round of coding, patterns, categories and themes within and between the codes were sought (Stoffelen, 2019). The codes were reviewed, and similar codes were connected and rephrased in order to place them within categories and themes. The categories and themes that emerged were compared and combined with the preliminary themes and categories. The next step consisted of a provisional coding round based on codes derived from the theoretical framework (Stoffelen, 2019). This step also contained a manifest coding round to analyse recurring phrases, statements or words connected to the case (Hesmondhalgh, 2006). Within the fourth step, the codes, categories and themes of Step 2 were compared and combined with the provisional codes of Step 3 to come to a hierarchical coding scheme (Stoffelen, 2019). This hierarchical coding scheme was applied within the last round of coding of the data (Stoffelen, 2019). After the coding phase, the data was again connected to the research aim and questions in order to produce the results of the research (Cope, 2010a). After this, key findings were extracted from the analysed data and connected to the research questions. Where the available data lacked information about the topic, additional sources were sought to provide the necessary data (Stoffelen, 2019).

Ethical

considerations

The research was conducted on the basis of the five principles of the Dutch behavioural code on scientific integrity: honesty, meticulousness, independence and responsibility (Nederlandse gedragscode wetenschappelijke integriteit, 2018). For the case, local authorisation was sought (Hay, 2016) from the main initiator of the project, Mr. J. Kiewiet. For every interview, informed consent was obtained on the basis that they were informed about the purpose and content of the research. The data was carefully handled and, by request, anonymized (Hay, 2010). However, due to the limited stakeholders within the case and high levels of familiarity within the local communities, it was made clear to the participants that it was likely that participants could be traced back through the

data. A form provided by the RUG was used to confirm informed consent of the participants. The outcomes of the transcripts and analyses were disseminated upon request and participants were given the power to adjust the data derived from them (Hay, 2010). Hay (2019) suggest that researchers should be reflexive about their position towards the research and participants. Being a planning consultant in sustainable energy projects and local proponent of a sustainable energy project influences, the researchers' interpretation and attitude towards participants. This influence was tried to be mitigated by deliberation of research approach, participant selection, data gathering and analyses with the main supervisor, other faculty staff and fellow students. Two other issues emerged within the case research, one regarding research fatigue, the other regarding the reviving of old conflicts within the communities. Some (potential) participants stated that they repeatedly received requests for interviews about the solar farm. In hindsight, a more thorough research of previous studies on the case could have predicted these responses. The responses were reported to the faculty in order for it to be taken into account in future research. The other issue considers the contestedness of space on Ameland, which is apparent as possible conflicting interests between nature, tourism and local inhabitants. With researching a contested project taking up 10-hectare space, old disputes potentially could re-emerge. To mitigate these effects, this issue was consulted with the interviewees. All stated that this was not an issue for them, although some did want to remain anonymous.

Background to the case study: An overview of Ameland and the Solarfarm

The island of Ameland

Ameland is an island between the UNESCO World Heritage Area of the Wadden Sea (UNESCO, 2019) and the North Sea along the north-western coast of the Netherlands. It neighbours the islands of Terschelling and Schiermonnikoog. The island covers 5,900 hectares of land (CBS, 2018) and has a total of 3,741 inhabitants (CBS, 2019b). The island has four villages, two in the west named Hollum (1,260 inhabitants) and Ballum (440 inhabitants) and two in the east called Nes (1,230 inhabitants) and Buren (710 inhabitants) (see Figure 8).

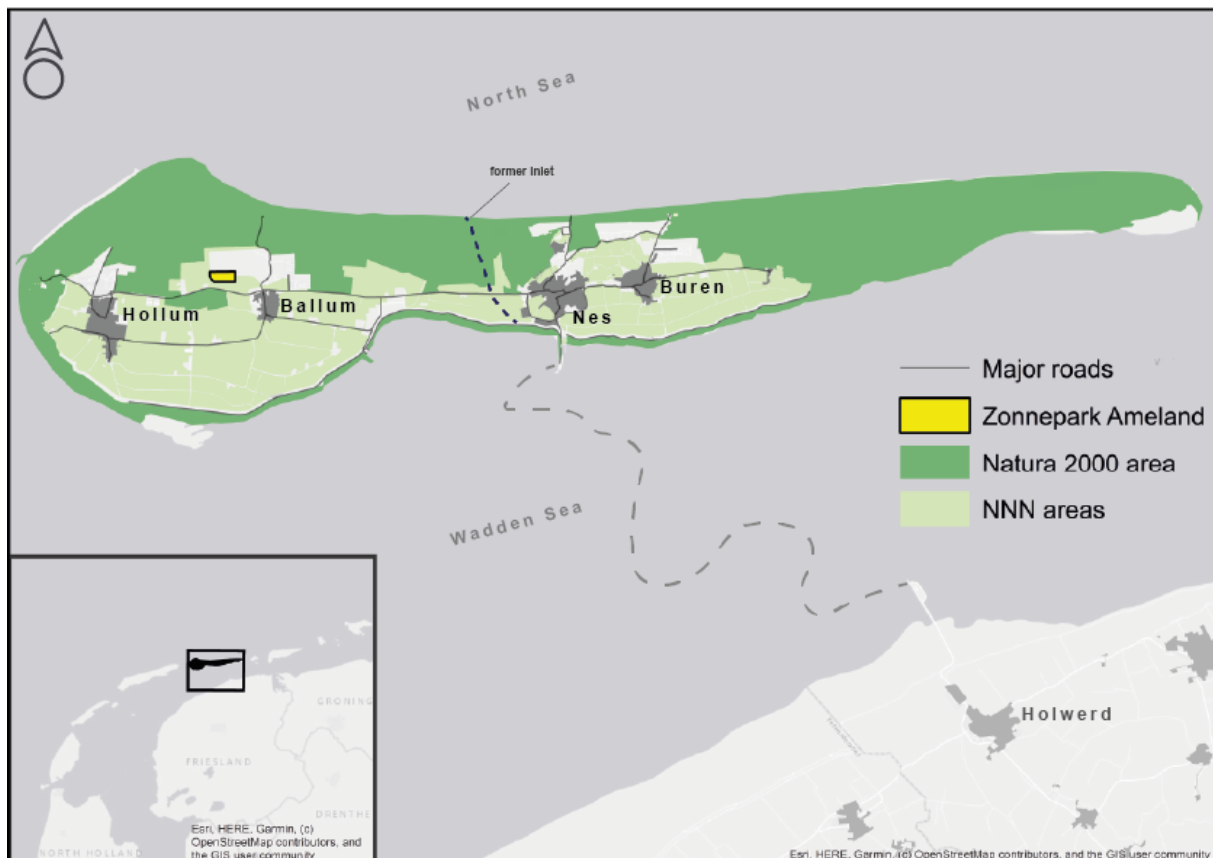


Figure 8. The Island of Ameland. Sources: (Buiting Advies, 2019; EEA, 2016; Esri Nederland, 2019; Kadaster, 2019) adjusted by student.

The mean annual income of the island is slightly under the national mean with €27,000 (national: €28,200), but slightly higher than the provincial mean of Friesland of €26,100. The largest industry and main source of income is tourism (CBS, 2019c; CBS, 2019d; Sijtsma et al., 2012). The island is connected to the mainland by a ferry that fares between Nes and Holwerd in Friesland. The trip takes approximately 50 minutes, but recent geomorphological processes have caused delays and threaten the accessibility of the island (Deltares, 2016; van Laarhoven, 2019). Most of the island is connected to one main road from Hollum to Ballum to Nes and eventually Buren. Due to its accessibility (or the lack of), high degree of community-mindedness, and the regular influx of tourists, Ameland has a relative high density of facilities in comparison to the mainland, but lacks a hospital (CBS, 2019e). Ameland also has its own Municipality bearing the same name, the office of the Municipality resides in Ballum. Like most of the northern Netherlands, the island was formed by glacial and interglacial periods (Berendsen, 2005). During the last glacial period, the North Sea was largely dry and *dekzand* (coversand) was deposited on the plains. The warmer period that followed, the Holocene, caused sea-level rise which resulted in the deposition of clay and sand along the current locations of the

Wadden islands, eventually forming two walls. One of these walls laid along the current location of Ameland and Terschelling and behind this wall, peat was deposited. In the millennia before the modern era, dunes were formed on the wall. Inlets from the sea eventually were formed and washed the peat area away, making Ameland an island (Bazelmans et al. 2012; van der Spek, 1996; de Vries, 2019). From the 8th century onwards, the islands of the Wadden Sea became fully colonised by humans (de Vries, 2019). Ameland provided only a few sources of income, primarily fishery and agriculture, and later also sailing and whale hunting (De Hokjesman: Aflevering 1: De Amelanders, 2014; Jansen, 2002). From the 15th until the 18th century, Ameland was ruled independently, of the Province of Friesland and the Dutch Republic, by the lordship of the Cammingha family (Jansen, 2002). This family issued separate law from the rest of the country (Halbertsma 1856 cited by Jansen 2002). After the family did not extent their heir lineage, the current royal family of Orange bought the island and brought it under the control of the Dutch Kingdom (Jansen, 2010). Some inhabitants link this history to their sense of freedom and independence from the mainland (De Hokjesman: Aflevering 1: De Amelanders, 2014), although these traits are recognized within islander culture across the world (Conkling, 2007). This is probably caused by the heightened sense of place islanders have due to precisely-defined geographical boundaries, familiarity with the environment (Hay, 2006) and closeness to neighbours (Conkling, 2007). This cultural aspects are accompanied by senses of cooperation, loyalty, tolerance and discretion, but also high rates of gossip (Putz, 1984, in Conkling, 2007). These traits were exemplified during interviews of a Dutch TV show called 'de Hokjesman', which was about the Amelanders (De Hokjesman: Aflevering 1: De Amelanders, 2014). An example of islandness is apparent within local folklore and festivals, like the Sunneklaas (Santa Claus) festival. During this festival on 5 December, outsiders are not allowed to be on the streets of Ameland, only Amelander adult males (De Hokjesman: Aflevering 1: De Amelanders, 2014; van Es, 2011; Jansen, 2010; Omrop Fryslân, 2018; Scheer, 2018). Another trait of the Amelanders, related to their sense of freedom, is the independence from some mainland laws, for instance dispensation of mandatory Frisian classes in primary school issued by the Province. The reason for this being that the islanders have their own dialects (Jansen, 2010). Their sense of independence is also apparent in the political parties within the municipal council, where currently three of the six parties are local parties. The other three are local chapters of national parties (Gemeente Ameland, 2018). The local parties also have the majority of the seats in the council, with 8 of the total of 11 seats (Gemeente Ameland, 2019a), which is higher than the national average of 32,2% (NOS, 2018). In the middle of the Island, originally there was an inlet of the sea that caused the east and west sides of the island to be divided. This divide is still apparent in different forms. For instance, the villages of Hollum and Ballum on the west are originally Protestant, whereas Nes and Buren in the east are Catholic. This physical separation also caused the Amelander dialect to have eastern and western versions (Jansen, 2002; Jansen, 2010; van Maris, 2010) and even led to heated rivalries between the two football clubs on the island (Boeringa, 2019). In one interview during the tv-episode, it was said that, before, people from Ameland did not marry an Amelander from the other side (De Hokjesman: Aflevering 1: De Amelanders, 2014). However, in recent years tensions surrounding this divide have been largely dissolved (Boeringa, 2019; De Hokjesman: Aflevering 1: De Amelanders, 2014), but it is still noticeable in activities, clubs, communities and daily life (Jansen, 2010; Kiewiet, 2019). Furthermore, according to Jansen (2010), the western part of the island remains more traditional and conservative towards local tradition and dialect compared to the eastern villages. Jansen (2010) finds that this may be a result of the villages Ballum and Hollum depending less on tourism than the villages in the east and because the east has less immigration from outside of the island. In addition to the built environment of the these villages on the island, a significant part of Ameland consists of nature areas, including Natura 2000³ area of the Waddensea. This area is, because of its dynamic nature, an important birthplace and biotope for multiple species (Alterra, 2018; Bosman, 2011; Common Wadden Sea Secretariat, 2016; UNESCO, 2019). On the island itself, the dunes also form an important

³ Natura 2000 is a network of nature areas protected under EU-regulations (Rijksoverheid, 2019).

Natura 2000 area (Alterra, 2018), because they provide different succession states, biotopes and environments for different species (Dijkema et al., 2005; van Tooren & Krol, 2005). The island is also replete with Natuurnetwerk Nederland⁴ (NNN) areas and natural managed agricultural lands (Pronvinsje Fryslân, 2019). Both the natural environment and complementary to that the landscape aesthetics are big attraction factors for tourists coming to the islands. These factors provoke strong feelings of connection to nature (Folmer et al., 2013; Sijtsma et al., 2012). The Director of the local tourism board adds to this, saying that this group of tourists is growing:

“An increasing part, the slow tourist, is interested in the destination where he or she is going to on vacation. Nature, quietness, history and culture are important in that.” (VVV Ameland, 2019).

The strong senses of place of Amelanders, a different and independent socio-political situation from the mainland, large amount of nature areas, and high rates of tourism, are factors that can cause the space and decision-making on the island to be highly contested. In the interviews of this research, this was mentioned by the agrarian organisation LTO (2014), the local nature group Natuurwerkgroep Ameland (2019), and the tourist organisation VVV Ameland (2019). A representative of the Municipality additionally said about this:

“Well that is apparent right ... especially on this island. Square meters are becoming increasingly limited, because everyone gets that now and then space is needed for building, but it always comes at the expense of something else. Every square meter comes at the expense of this” (van Tiggelen, 2019).

Media accounts of conflicts caused by this contestedness are abundant. Recent examples of this are plans for new tourist developments at the location of the old tropical swimming pool (Fierant & de Jong, 2019), plans for increasing skeet shooting activities on the airfield (van den Berg, 2017), new plans for the transportation towards the island (Wijnberg, 2019), plans for a new care centre (Fierant, 2019) and an expansion of a recreational park (AD, 2019).

Zonnepark Ameland

The Zonnepark Ameland is located northwest to the village of Ballum in the eastern part of Ameland and lays within the boundaries of the Ameland Airport (Rho Adviseurs, 2014). The initiative started with the former Mayor of Ameland who saw solar farm being built while visiting France. He asked the employees of his Municipality if this would also be possible on Ameland and asked Eneco, then still partly owned by several Dutch municipalities, to cooperate in the venture (Kiewiet, 2019; van Tiggelen, 2019). The Municipality had also set a goal to become self-sustaining in energy by 2020 (Gemeente Ameland, 2011) and saw the solar farm as an opportunity to act on this (van Tiggelen, 2019). Wind energy was ruled out for the island, because wind turbines were prohibited under provincial law (Provincie Fryslân, 2018). Therefore, the Municipality searched for a location where the solar farm could be situated. This search was based on three criteria, first it had to be 10 hectares in order to provide enough energy for their inhabitants (van Tiggelen, 2019). The Municipality calculated that 6 MW could be produced on 10 hectares, enough for the energy consumption of the 1,700 households on the island (Kiewiet, 2019). The second criterion was that the land had to be owned by the Municipality, and the third criterion entailed that there had to be as few nature regulations in place as possible. Based on these criteria, the airfield was deemed to be most suitable (van Tiggelen, 2019). The solar farm was one of the first land based solar farms in the Netherlands and has a capacity of 6 MW. Since instalment in March 2017, the park has generated 13,000,000 kWh

⁴ NNN is a network of nature areas within the Netherlands. Natura 2000 areas are also part of this (Rijksoverheid, 2019a).

from its 23,000 solar panels (Duurzaam Ameland, 2019). The cost of the park amounted to around €7.5 million, that was funded by multiple parties. Eneco, AEC and the Municipality each contributed €331,681 (ENECO, 2019; van Tiggelen, 2019). An amount of €2,650,000, was granted by the Waddenfonds (Waddenfonds, 2019), a fund supported by revenue from gas extraction in the Wadden sea area (Dekker, 2005). Another €331,000 from the Province of Fryslân was given as a grant. The remaining 3.5 million was borrowed from a private bank (van Tiggelen, 2019). The financial support from the Province and Waddenfonds was arguably needed, according to the AEC, because solar farms were not profitable at the time (Kiewiet, 2019; Slootweg in van den Dikkenberg, 2014). Nowadays, due to higher cost-effectiveness of solarpanels (Bolinger & Steel, 2015; Krebs et al., 2013; Rehman & Bader, 2007; Ryan et al., 2016), solar farms in the Netherlands are now generally considered to be viable with only the so-called '*SDE+ subsidy*', which is a national subsidy that tops up the price of produced kilowatt-hours from renewable energy projects (RVO, 2019). Along with the rise of solar farms, an issue is the fluctuating capacity that is caused by the non-continual production of energy by solar panels. This is caused by peaks of energy flowing into the grid on sunny days and during summer periods (van Loon, 2018). In the case of solar farm Ameland, this issue was addressed by digging a new cable of seven kilometres to the substation in Nes where the local grid is connected with a cable from the mainland (Kiewiet, 2019). Some of these effects are mitigated by the influx of tourists on sunny days and summer periods on the island, that causes the energy consumption on the island to rise (Camping Roosdunen, 2019; VVV Ameland, 2019). The solar farm is unique because one third is owned by the local community through bonds provided by the AEC, another third by the Municipality and another by the company, Eneco, Solar, Bio & Hydro (AEC, sd). The parties are organised together in a private company (Zonnepark Ameland BV) and have different roles. The AEC was and is responsible for local support and engagement and does visual inspection (Kiewiet, 2019, van Tiggelen, 2019). The Municipality was responsible for the legal procedures, the plan making, the subsidy tracks and still is responsible for the financial administration (van Tiggelen, 2019). Eneco was responsible for the installation of the solar farm and currently does the technical monitoring of the solar farm (ENECO, 2019). The park is enclosed on the southern and western borders with a 4m tall wall. The south-eastern side also contains a wetland, that was brought up to contribute to the biodiversity of the area. The wall is meant to keep the panels out of sight (Rho Adviseurs, 2014). The park is located between multiple nature areas, on the north side lies the Natura 2000 area, 'Duinen Ameland', and in the east and south, the park borders NNN-areas that are also designated as a goose foraging area. In addition to the nature values, the landscape values of the area are the openness of the polder and the view that this openness provides on the surrounding landscapes (Natuurwerkgroep Ameland, 2019; Rho adviseurs, 2014). Within the local community, there was some debate about the location of the park, mostly on impacts on both these nature and landscape values (Leeuwarder Courant, 2014; Leeuwarder Courant, 2014a). A functional map and aerial photo of the solar farm can be seen in Figure 9. As stated before, the solar farm is located on the airfield of Ameland. This airfield is used for small civil air traffic, gliders, rescue/emergency flights (AIS, 2019), parachuting and other recreational uses; and it is owned and operated by the Municipality of Ameland (Gemeente Ameland, 2019b). The airport is the only airport on the five Wadden islands and was built in 1945, just after the WWII, by local volunteers and the Municipality of Ameland to relieve the island from isolation and to aid in the aerial defence of the country (van der Brink & Nagtegaal, 2007). The airfield is often thought to be an additional asset for the recreational value of the island (Ameland, 2012; Stichting OMA, 2014; Peters, 2014). Parts of the airfield have also been in agricultural use, in a lease from the Municipality (LTO-Noord, 2014; van Tiggelen, 2019) to produce fodder (LTO-Noord, 2014; van der Brink & Nagtegaal, 2007).



Figure 9. Functional map and aerial photo of Zonnepark Ameland and its' surroundings. Source: (Esri Nederland(a), 2019; Google, 2019; Provincie Fryslân, 2019).

Results

In this chapter the results of the case study are presented. The first paragraph contains a description of the relevant stakeholders of the case and is followed by an analyses of the factors within the first boundary of SLOs, legitimacy. After legitimacy, the social impacts of the project are considered. The second boundary of the SLO framework, credibility is analysed after that and this paragraph also contains an analyses of the factors of public participation and community engagement. The last paragraph contains an analyses of the highest level of Trust(worthiness). A synthesis of and reflection on the results is given in the discussion chapter that comes after the results.

Stakeholders and communities

Most of the stakeholders within the case of Zonnepark were local stakeholders from the island. These different local stakeholders can be place in five broad categories: local residents and businesses, users of the airfield and land on the airfield, NGOs, and legislative and granting parties.

Local residents and businesses

This group consists of local stakeholders that are either inhabitants of and/or business on Ameland. These stakeholders can be categorized as communities of place, because they are located on the island, but also as communities of interest because they have different interests related to the island. Their proximity to the solar farm or interest related to the location of the solar farm, determines their extent of being impacted by the project. Inhabitants near the solar farm can for instance experience impacts on their view. Three factors of the case have increased the extent of influence of local stakeholders on the project, namely public participation in decision-making or/and through membership of AEC and ownership of bonds within the solar farm. Examples of these stakeholders are the recreation companies and residents near the solar farm.

Users of the airfield

There are two kinds of users of the airfield. The first are those who use the airfield for aviation activities, for instance the glider club and parachutists. Second are the parties that lease the land for other activities, either for agriculture or skeet shooting. The stakeholders related to aviation are more regional stakeholders and communities of interest, because activities like gliding and parachuting are mostly done by tourists and other people from outside the island (Skydive Ameland, 2014; Zweefvliegclub Ameland, 2014). The extent of impact is quite high because there are increases in risks for these users because of the solar farm (Rho adviseurs, 2014). For some this caused impacts on their use of the airfield and the safety of their practices. Additionally, the glider club claimed that they could not use the airfield anymore, because of the project (Zweefvliegclub Ameland, 2019), however, this issue remains complex and is discussed further below. The aviation users did have some influence on the project because, in response to their concern, a safety survey was done and the design of the solar farm was altered (van Tiggelen, 2019). The other land-based users, the farmers and skeet-shooters, are local stakeholders that are both communities of place and interest. The extent of impact on the famers was high because they lost farming land due to the project (de Jong, 2019a; LTO-Noord, 2014; van Tiggelen, 2019). They did have some financial influence on the project because their lease-contract had to be compensated by the Municipality (van Tiggelen, 2019).

NGOs

Multiple NGOs were involved in the process, including nature and landscape protection organisations: Natuurwerkgroep Ameland (Nature organisation Ameland), Vogelwachten Hollum-Ballum and Nes en Buren (local Bird protection organisations), VANG (Agrarian nature and geese shelter organisation) and Wildbeheereenheid Ameland (wildlife management unit Ameland). Other NGOs were the LTO-Noord, department Ameland (Dutch horticulture and agriculture organisation), Stichting OMA (local heritage protection foundation), and VVV Ameland (local tourist board/organisation). These NGOs can be considered as local stakeholders and communities of

interest. They can also be considered as communities of place, because most representatives and members are from Ameland. Only the LTO and VVV are also nationally and regionally operating NGOs (LTO, 2019; VVV, 2019). The nature and landscape NGOs all stated that their interest, the protection of nature and/or landscape values, was or would be impacted because of the project (Leeuwarder Courant, 2014; Natuurwerkgroep Ameland, 2019; VANG, 2014; Vogelwachten Ameland, 2014). The LTO experienced impact because of loss of agricultural land due to the project (LTO-Noord, 2014; de Jong, 2019a) and Stichting OMA claimed nature, landscape and financial impacts related to their interests (Stichting OMA, 2015). VVV Ameland (2019) asserts not to be impacted by the project. The extent of influence of the nature and landscape NGOs was high because they were made responsible for the design of the nature plan of solar farm (Natuurwerkgroep Ameland, van Tiggelen, 2019). LTO only had influence via their members that leased the parcels on the airfield, because they were had to negotiate about their compensation with the Municipality. The nature and landscape NGOs along with the LTO and Stichting OMA also influenced the project by issuing a location survey for the solar farm that was honoured by the municipal council (Gemeente Ameland, 2014). VVV Ameland had no influence on the project (VVV Ameland, 2019).

Proponents

Zonnepark Ameland has two local proponents, the Municipality of Ameland and the AEC. Both are communities of place, because they are based on the island, and communities of interest, because their goal is to transition to renewable energy systems (Kiewiet, 2019; Gemeente Ameland, 2019). AEC is a local energy cooperation from Ameland and has the aim to deliver sustainable energy and CO₂-offsetted (compensated) gas to users on Ameland (AEC, 2019). The AEC is also part of Energie van Ons (energy from/of us) (AEC, 2019a), which is a collaboration of local energy cooperation within the three northern provinces. The AEC and the Municipality are also partners within the organisation of Duurzaam Ameland, which is a collaboration and covenant of companies, governments and universities with the goal to make Ameland self-sustainable (Duurzaam Ameland(a), 2019; Kiewiet, 2019). The third proponent ENECO is also partner in this covenant and is an international energy company. ENECO can be considered as a societal stakeholder and community of interest, because they have an interest in producing renewable energy (ENECO, 2019). Being the proponents, their extent of impact on the project was high. The Municipality can be regarded as having the highest impact, because they initiated the plan, organised the public participation, are owners of the land and were the decision-making authority (van Tiggelen, 2019). The AEC mostly impacted the community engagement processes by providing membership, benefits and voting power to inhabitants and business owners on the island (Kiewiet, 2019). ENECO had the least influence on the project and had most impact on the financial and technical aspects of the project (ENECO, 2019; van Tiggelen, 2019). The extent of impact of the project on these proponents are the financial gains and the benefits of producing renewable energy.

Other legislative and grating parties

Three other stakeholders also played a role within Zonnepark Ameland, namely Province of Fryslân, the Waddenfonds and the Dutch state. Both the Waddenfonds and the Province are regional/societal stakeholders with the Province being the legislative authority for Friesland and the Waddenfonds being a development fund for the Dutch Waddensea region (Dekker, 2005). The State is a societal stakeholder. As governments, the Province and the State are communities of interest and as a development fund the Waddenfonds is also a community of interest. The impact of all stakeholders was financial: the Waddenfonds granted the project €2,650,000 (Waddenfonds, 2019), the Province €331,681 (ENECO, 2019; van Tiggelen, 2019), and the State provides a subsidy of 13 cents per produced kWh (RVO, 2019; van Tiggelen, 2019). The Province also impacted the project by providing a license (Provincie Fryslân, 2014). The State and Province are impacted because the solar farm produces renewable energy in line with their ambition to increase the production of renewable energy (Provincie Fryslân, 2019; RVO, 2019).

Legitimacy: from withheld to acceptance

This section presents the results from an analyses covering the factors that make up the first boundary of the SLO continuum, legitimacy. Legitimacy forms a boundary between the level of withdrawal, where there is no SLO obtained from a stakeholder, and the level of acceptance, that forms the base-level of SLOs (Thomson & Boutilier, 2011). First, the indicators of withheld are examined followed by the three dimensions of legitimacy: legal and administrative, economic, and socio-political (Moffat & Zhang, 2014; Thomson & Boutilier, 2011). Lastly, the results of the indicators of acceptance are explored.

Indicators of withheld

In the case of Zonnepark Ameland, boycotts, protests or blockades did not occur. Three opposing stakeholders, LTO, Stichting Oma, Natuurwerkgroep Ameland, threatened with legal challenges but did not act on them (Gemeente Ameland, 2014; Natuurwerkgroep Ameland, 2019). According to Natuurwerkgroep Ameland (2019), they did not pursue because they lacked financial means. Another opposing stakeholder, ZCA (glider club Ameland), did file a lawsuit against the Municipality as one of the proponents of Zonnepark Ameland (Leeuwarder Courant, 2016). The ZCA filed a lawsuit because their national association, the KNVvL, refused to cover the risks of the glider pulling cable breaking and damaging the panels of the solar farm in their insurance (ZCA, 2019). This cable is located on the airfield and pulls the gliders into the air (KNVvL, 2016). To address this, the ZCA wanted the Municipality to replace the current steel cable with a plastic cable (ZCA, 2016). Since the Municipality refused to pay for the replacement, the ZCA filed a lawsuit against the Municipality (Leeuwarder Courant, 2016). The lawsuit was lost by the ZCA (KNVvL, 2019; van Tiggelen, 2019). The present situation is that the ZCA no longer operates out of Ameland.

Legal and administrative legitimacy and procedural fairness

For the development of Zonnepark Ameland, the proponents had to adhere to laws and had to follow certain procedures. In this section, these laws and procedures are described, along with the perceptions of the different stakeholders on how fair and just these laws and procedures were followed.

The environmental permit procedure

In the Netherlands, an environmental permit is needed when a planned development is not allowed within the zonal plan (Rijkswaterstaat, 2019). Zonnepark Ameland also required this permit (Rho adviseurs, 2014). Within the application for the permit, an assessment of the environmental impacts must be done, and it has to be made clear that the development or activity aligns with current policies and laws (Rho adviseurs, 2014; Rijkswaterstaat, 2019). The Municipality, along with other relevant governments like the Province, assesses these aspects, and is the authority that grants or denies the permit (Rijkswaterstaat, 2019). In the case of Zonnepark Ameland, this caused a possible conflict of interest, because the Municipality was both the issuer of the permit and a proponent of the project. One member of the municipal council considered that the Municipality should not be participant in a company, but should instead draw up regulations for developments (IJnsen, 2012). However, both the Municipality and other interviewees stated that they did not see this as a conflict of interest (Camping Roosdunen, 2019; Residents near the project, 2019; van Tiggelen, 2019; VVV Ameland, 2019). The Municipality claimed that the project manager of the solar farm was not the person responsible for the permit procedure, and that this was handled by another department within the Municipality (van Tiggelen, 2019). On the issue, that the Municipality was the owner of the park as well as the issuer of the permit, two residents near the project said:

'That is okay for me, we should not be dependent on ENECO. These big bodies only want profit. Especially with renewable energy, the Municipality should be a pioneer and hold the developments within their own grasp.' (Residents near Zonnepark Ameland, 2019).

According to the local tourist organisation, this increased even increased the acceptance of the project:

“Yes that is also good for local support, that the money so to say doesn’t go to the capital (as a metaphor for big companies). I think they have done right in that regard.” (VVV Ameland, 2019).

Other issues concerning the permit where the assessments of the project’s impacts on nature, on safety and on the use of the airfield. The development application asserted that the project would not cause any negative impacts on nature and that there would be no disproportionate impacts on the safety or use of the airfield (Rho adviseurs, 2014). According to three nature and landscape organisations, the assessment of the impacts on nature was inadequate (Natuurwerkgroep Ameland, 2019; VANG, 2014; Vogelwachten Ameland, 2014) and of a low-quality standard (Natuurwerkgroep Ameland, 2019). Natuurwerkgroep Ameland (2019) argued that there were impacts of the solar farm that remained unclear, for instance if the birds and other species perceive the solar farm as an obstacle within the natural environment. To mitigate some of the impacts on nature and to add value to the plan, a landscape plan for the solar farm was designed (Rho adviseurs, 2014; van Tiggelen, 2019). However, this plan was not carried out as described within the permit. The planted bushes, which had the purpose to keep the solar farm out of sight on the eastern and northern side (Rho adviseurs, 2014), did not survive (Kiewiet, 2019; Natuurwerkgroep Ameland, 2019). The artificial dunes that were created were different from the original design, because in the design they had a height of 2,5m, so the existing dunes north of the area would still be visible from the surrounding areas (Rho adviseurs, 2019). However, in the following construction, the dunes were made higher (Natuurwerkgroep Ameland, 2019; van Tiggelen, 2019), by up to 4 metres (Natuurwerkgroep Ameland, 2019), because a measurement mistake by workers of the Municipality (van Tiggelen, 2019). Additionally, the development application stated that the risks the solar farm poses for safety on the airfield were limited and that activities within the air could be continued safely, provided that additional safety instructions are given to users of the airfield. This assessment was carried out by the Netherlands Aerospace Centre (NLR) (Rho adviseurs, 2014). The ZCA (2014) did not agree with the assessment, because they considered the risks of possible damage to the solarpanels, due to the glider cable landing in the solar farm, to high. Furthermore, the skydiving company found that the assessment was inadequate and stated that the additional safety instructions were unclear (Skydive Ameland, 2014). Airport Ameland however, expressed that the safety assessment was adequate (Airport Ameland, 2019).

Provincial spatial and nature policies

In the Netherlands, Provinces are responsible for policies on spatial developments outside of villages and cities (Winsemius & Hirsch Ballin, 2006) and for the realisation and protection of nature areas (Rijksoverheid, 2019). Because the solar farm was a development outside of the villages of Ameland, the Province also became an approval authority. Although, the Province of Fryslân did not have policy on solar farms at the time (van Tiggelen, 2019), they gave, in consultation with the Municipality, their approval of the project (Rho adviseurs, 2014; van Tiggelen, 2019). Now the Province does have policy on solar farms (Provincie Fryslân, 2015) and a farmer from Ameland questioned whether the project would still be approved by the Province under this new policy (de Jong, 2019a). The Natuurwerkgroep Ameland (2019) also proclaimed that new procedures issued in this policy demands more regard for nature and landscape and that a similar approach should have been taken in the case of Zonnepark Ameland. In addition to this, the airfield Ameland was part of the NNN (then EHS) nature network at the time of the approval and would have prevented a solar farm being built there (Provincie Fryslân, 2018). However, this status was later changed by the Province, because according to them the airfield should not have been designated as NNN in the first place (Provincie Fryslân, 2014; van Tiggelen, 2019). Natuurwerkgroep Ameland (2019) are sceptical about this explanation and, along with other nature and landscape organisations, question if the

status was not merely changed to approve the project (Natuurwerkgroep Ameland, 2019; VANG, 2014; Vogelwachten Ameland, 2019).

Compensation and buy out of the farmers' leases

Zonnepark Ameland takes up 10 hectare of land, owned by the Municipality, that was previously used for agricultural purposes (van Tiggelen, 2019). Within Dutch civil law, the rights of leaseholders of land, especially for agriculture, are protected. This law includes hereditary transition rights and sets rules for terminations by the lessor (Rijksoverheid, 2019; RVO, 2017). This means that a lease contract cannot be terminated by the lessor without a substantiated reason (RVO, 2017) and that compensation has to be provided when a lease contract is terminated (Rijksoverheid, 2019). One reason by which a lease contract can be terminated is that of 'common interest'. This reason was also used by the Municipality. In order to compensate the farmers, the Municipality researched two options, the exchange of leasable land or financial compensation (van Tiggelen, 2019). For the farmers and LTO-Noord, an exchange of land was their preferred option, because their businesses depend on their amount of hectares of farmland (de Jong, 2013; LTO-Noord, 2014; VOF Het Zwanewater, 2014). However, due to limited and contested space on the island, only some farmers could be compensated with other land. The others had to be financially compensated based on the current value (van Tiggelen, 2019). The total amount of compensation costs was €246,000 (Gemeente Ameland, 2015). Although the farmers proclaimed that they would rather receive compensation in land, it is not clear if they considered the compensation to be fair, albeit one compensated farmer remained opposed (de Jong, 2019a). However, no legal challenges were filed against the termination of the lease contracts (van Tiggelen, 2019).

Grants, subsidies and state aid

Zonnepark Ameland BV received two grants for the realisation of the project and receives a subsidy per produced kilowatt-hour (Kiewiet, 2019). In the procedure for the grant from the Waddenfonds, one condition was that the grant should not constitute 'state aid' and should not result in unfair competition (in terms of EU understandings) (Waddenfonds, 2018). Although comments were made on the fact that project received 'a lot of public money' (Kiewiet, 2019), after some deliberation between the Municipality and the fund, the grant of €2,600,000 was not considered to be unfair state support (van Tiggelen, 2019). For the other grant from the Province and the subsidy from the Dutch state, this was not an issue (van Tiggelen, 2019; Kenniscentrum Europa decentraal, 2015). In contrast, the contributions of the Municipality could arguably be seen as state aid in that the Municipality did not open the lease of land and construction of the project for tender. A clear conclusion on whether or not this is an important issue cannot be made because there is still a lot of debate and uncertainty about whether giving land or other contracts for the purpose of producing renewable energy is considered state aid (Wiebes, 2019).

Economic legitimacy

In this section, the compensation, burdens, and distribution of benefits that are the result of Zonnepark Ameland, are reviewed. Additionally, the Municipality is one of the owners and gets its main source of income from local taxes. Because of this, the financial feasibility of the project and the Municipality itself are also analysed.

Financial feasibility of the project and Municipality of Ameland

Multiple stakeholders voiced their concerns about the financial feasibility of the project and negative effects of this on the budget of the Municipality. A family near the project voiced this in their legal objection:

"Financially it is quite a big risk and the returns will be virtually nil, with a low return rate. And [there will be] a lot of unforeseen obstacles during construction that will only be to the detriment of the

financial returns. It should not be the case that the taxpayer has to be the one to pay for this prestige project in the long term, especially now that we are in a financially-troubled period.” (Residents near the project, 2014a).

These concerns about the risks of the project on the budget of the Municipality were shared by other stakeholders, including a local farmer (VOF Het Zwanewater, 2014) and a local heritage group (Stichting OMA, 2014). These matters were also voiced by multiple parties within the municipal council and were caused by a lot of uncertainties about the business case of the project (Gemeente Ameland, 2014; 2015). The initial the return on investment was calculated within the range of 0,2% to 2,6% (Rebel Energie, 2014), but later this was changed to 6% (Gemeente Ameland, 2015). Additionally, in its first two and a half years of operation, the solar farm was shown to be profitable (Duurzaam Ameland, 2019; Kiewiet, 2019), with the yields being higher than predicted because of greater solar radiation (AEC, 2018). Other than a return on investment, the Municipality also benefits from the project by revenue from the lease of the land (Oud, 2015) and through compensation for administrative and accounting tasks (van Tiggelen, 2019). In contrast, a critical note is given by one of the local farmers about the hidden public costs that might emerge when additional funds have to be spent on adaptations to the electricity systems, because of the increase in irregular energy production (de Jong, 2019a).

Burdens and compensation

The only financial compensation that was provided was for the termination of the farmers' lease termination. According to LTO-Noord (2014), without compensation for the loss of this land, agriculture on Ameland would face serious problems. Compensation with other farmlands was the preferred option for these farmers (LTO-Noord, 2014; De Jong, 2015) and the lessees were willing to cooperate in an exchange of farmlands (Gemeente Ameland, 2014a). Keeping the number of hectares of farmland is important for farmers because this determines how many animals they can keep and how much emissions they can expel (LTO-Noord, 2014; De Jong, 2015). Within the municipal Council, there was some critique on the compensation approach and some parties found that the farmers were engaged too late (Gemeente Ameland(a), 2014). As previously described, only one farmer could be compensated with other farmland, due to the limited availability of land on the island, whereas other farmers had to be financially compensated (van Tiggelen, 2019). Note, other stakeholders were not compensated. Albeit, most stakeholders did not think that they should be compensated, because they did not experience much burdens (Residents near project, 2019). Eneco (2019) also stated that, although compensation for residents near wind turbines is common, they do not compensate stakeholders near solar farms, because there are no effects like noise or shading. One stakeholder that did want compensation was the glider club for the replacement of their cable (ZCA, 2014). The Municipality offered to provide a loan for a new cable that could be paid off through a slight increase in the club's yearly lease payments (van Tiggelen, 2019). The ZCA however wanted to be compensated and filed a lawsuit against the Municipality to enforce the compensation. This case was lost by the ZCA (KNVVl, 2019; van Tiggelen, 2019).

Distribution of benefits

The benefits of the solar farm are distributed between the three owners, the Municipality, ENECO and AEC (ENECO, 2019; Kiewiet, 2019; van Tiggelen, 2019). The Municipality and the AEC are both local stakeholders, which means that two thirds of the revenue stay on Ameland. The AEC uses these revenues to develop new sustainable projects (Kiewiet, 2019) and distributed the benefits to local stakeholders by providing bonds in the solar farm. These bonds gave a return of 2,5% to 4% (AEC, 2018) and a total, 1,200 bonds of €250 were provided. These bonds were bought by over 80 applicants, 52 of who lived on the island and 28 who were owners of recreation dwellings (AEC, 2016). Multiple bonds per applicant could be bought, however applications with a lower amount of bonds got priority over applicants with higher amounts of bonds (AEC, sd; Kiewiet, 2019).

Socio-political legitimacy

Within this section, the factors of 'respect of local context', 'exploration of alternatives', of both location and measures, and the reputation of the proponents within the case are discussed. The perception whether the stakeholders found that they had access to all relevant information and if they found that they were being heard are also covered.

Respect of local context

Some of the opponents found that there were aspects within the local context that lacked consideration in project. In the permit application, the proponents stated that the parcels were just temporarily used for agriculture. However, the farmers' association found this to be a lack of respect, because they had been using the parcels for over 65 years (LTO-Noord, 2014). Stichting OMA (2014) followed this argument and proclaimed that the airfield has a historic and economic connection with the village of Ballum, because the inhabitants built the airfield themselves, and now this use is threatened by the solar farm. Albeit, a case could be made that a solarfarm that is largely initiated locally fits with this historic-economic connection. Another issue is voiced by the Natuurwerkgroep Ameland (2019) about the nature plan of the project, because some of proposed vegetation within the plan were not part of the local vegetation of Ameland. The Bird protection organisation also claimed that their knowledge of the local context was not consulted in the ecological impact assessment (Vogelwachten Ameland, 2014). Conversely, other stakeholders were of opinion that the project has shown respect for the local context because the project is in line with the cultural aspects of Ameland. A representative of a recreational company near the project was of opinion that the solar farm fitted in with the self-sustainable attitude of the Amelanders (Camping Roosdunen, 2019). The Director of the Tourist Board agrees with this in the following statement:

"But it does fit in with the identity of Ameland. Throughout the centuries people here on the island had to take care of their own needs and they had to live in a sustainable way. That is why islanders are self-sufficient and economical with their waste and these kinds of things. This mentality is still present on the island, also for energy" (VVV Ameland, 2019).

Exploration of alternatives

There was significant debate surrounding the project about the exploration of alternatives, especially regarding the location choice.

Alternative location

One of the first things the Municipality did was to find a suitable location for the solar farm. They based their search on three criteria. First the size, they calculated that 10 hectares were needed. A second criteria was that the land had to be property of the Municipality, and the third criteria was that there had to be as little nature policy restrictions on these lands as possible. Based on this, the Municipality concluded that the airfield was the most suitable location (van Tiggelen, 2019). However, a lot of the opposition was voiced against this location. Three stakeholders, Natuurwerkgroep Ameland (2019), Stichting OMA (2014), and ZCA (2019) said they did not oppose a solar park, rather this particular location. Since several alternative locations were suggested by different stakeholders, the Municipality issued a location survey for four different sites, of which one was the initial location. The different locations were analysed based on four criteria. The first was spatial; where does it fit in with the surrounding area and landscape? The second considered the suitability based on current policies. The third covered the available space and fourth was a practical criterion based on the attainability of the lands. This survey also concluded that the airfield was the most suitable location because the other three locations were either under 10 hectares, or were controlled under nature policy (Rho adviseurs, 2014). The location survey however did not end the debates because some stakeholders claimed that the quality of the survey was substandard (Gemeente Ameland, 2014; Natuurwerkgroep Ameland, 2019) and that it was used to legitimize the location of the airfield (Natuurwerkgroep Ameland, 2019). According to the Natuurwerkgroep

Ameland (2019), the solar farm does not fit with the existing landscape, and according to the ZCA (2019) the project limits use of the airfield. Two other stakeholders came with additional locations that were not analysed within the survey and voiced these within a council meeting (de Jong, 2014; Gemeente Ameland, 2014). These additional locations were however also found unsuitable because of nature regulations and availability (Gemeente Ameland, 2014a). The nature criterion was rigid because solar farms are not allowed within nature areas. Another rigid criterion was that the location had to be at least 10 hectares. However, the size of the project was a cause of oppositions. A council member summed up the opinion within the council and concluded that the airfield was the '*Least worst option*' (Tuil, 2014).

Alternative options

Along with alternative locations, alternative options to the solar farm were brought forward. Some stakeholders pointed out that the technical capability of solarpanels would develop and that solarpanels should be put on roofs (Gemeente Ameland, 2014). The Municipality claimed that not all houses in Ballum and the other villages can have solarpanels on their roofs because of their heritage status (Leeuwarder Courant, 2015). Other alternatives that were voiced were hydrogen and wind turbines. A project with hydrogen is already present on Ameland and was the first project Duurzaam Ameland developed (Duurzaam Ameland(a), 2019). Windmills are not allowed on the island (Provincie Fryslân, 2018), nonetheless Natuurwerkgroep Ameland (2019) offered a solution for this by suggesting to add an extra wind turbine at a park on the North Sea. Other stakeholders suggested that a focus on saving energy should first be implemented instead of producing more energy (Persbureau Ameland, 2012). The Nature organisation suggested the development of an underwater tidal kite generating electricity as an interesting alternative (Natuurwerkgroep Ameland, 2019). This tidal kite was a project affiliated with Duurzaam Ameland and was to be tested in 2020. The option was intended to come to market by 2022 (Elting, 2019).

Reputation of proponents

Remarks on the reputation of the proponents were mostly directed at the Municipality. A political party and Stichting OMA (2015) think that it is not the task of the Municipality to produce electricity. (Gemeente Ameland(b), 2015). Others also called it a prestige project of the Municipality and ENECO (de Jong, 2015; de Jong, 2019a). These critiques were also directed at the former Mayor, who claimed to be pro environment and renewable energy (Fierant, 2017) and came with the idea of a solar farm on Ameland (Kiewiet, 2019; van Tiggelen, 2019). Some islanders said that he had his 'own agenda', while the task of a mayor is to be impartial and to stand above the different parties (Fierant, 2017). Other Amelanders however think it is positive that the Municipality 'sticks its neck out' in order to move towards a sustainable future (Kiewiet, 2015). VVV Ameland (2019) claims that involvement of the Municipality and the AEC was necessary for gaining local support and that this local support would have lacked if ENECO was the only proponent. Two residents near the solar farm support this in their interview:

Yes, then we would have looked at it differently (if ENECO was the only owner). Then it would be another case, like here comes a big company only for the reason to make profit.' (Residents near the Zonnepark Ameland, 2019)

From these statements, it can be deduced that the ENECO did not have a high reputation, but that the AEC and the Municipality provided a better reputation for the Zonnepark Ameland BV. Furthermore, the local residents, Airport Ameland and a recreational company near the project also indicated that they trusted the proponents (Airport Ameland, 2019; Camping Roosdunen, 2019; Residents near the project, 2019). In contrast, the ZCA (2019) indicated that they did not trust the Municipality anymore.

Access to all relevant information

Within spatial-law procedures, some stakeholders claimed that they did not have access to all relevant information about the project. For instance, the LTO-Noord (2014) found some plans to be unclear and the Bird protection associations made similar comments (VANG, 2014; Vogelwachten, 2014). Furthermore, according to the users of the airfield, the ZCA and the skydiving club, the effects on the use and safety of the airfield were not clear (Skydive Ameland, 2014; ZCA, 2014). The Municipality responded to this by issuing the safety assessment and informed the other stakeholders about the unclear parts of the plans (Gemeente Ameland, 2019). Vogelwachten Ameland was in favour of the approach taken by the Municipality in sharing the relevant information:

"If you wanted to read the reports or wanted to see some other aspects, you could visit the Municipality and review all the documents. ... So, there is not wrong with that aspect." (Brijker, 2018 in Zomerdijk, 2018).

Being heard

Not all stakeholders found that they were heard and treated in a reasonable manner. Stichting OMA for instance questioned the council on why they could not deliberate with the Municipality about the location (Gemeente Ameland, 2014). Natuurwerkgroep Ameland (2019) commented that their arguments were not always taken seriously:

"Yes, and if I say that to the Municipality, I do not get through to them and then the alderman just says: 'all right, next point'." (Natuurwerkgroep Ameland, 2019).

The AEC did make a statement that their strategy was to take all concerns seriously and that they made effort in to fulfil this (Kiewiet, 2018 in Zomerdijk, 2018). Municipality Ameland also confirmed that this was an important aspect of their community engagement approach (Van Tiggelen, 2019). The Bird protection association found this approach to be sufficient and thought that, in addition to the legal objection, speaking at the council meetings and cooperating with the Municipality on the nature plan, there were not many options left (Brijker, 2018 in Zomerdijk, 2018).

Indicators of acceptance

Should all the dimensions and factors of legitimacy be in place, the project would pass the acceptance boundary. There were non outside NGOs present, only local NGOs were active that address lingering issues relating to the solar farm. In particular, Natuurwerkgroep Ameland (2019) still monitored the impact of the project on nature and considered that the nature plan had not been adequately executed.

Social impacts

The impacts of projects make up significant factors in obtaining SLOs. In order to reach economic legitimacy, the impacts, or burdens, must be outweighed by the benefits a project brings (Jijelava & Vanclay, 2018; Thomson & Boutilier, 2011). Additionally, an effective assessment of the impacts and the project's impacts on the social infrastructure are factors influencing the approval level of SLOs (Jijelava & Vanclay, 2018; Moffat & Zhang, 2014; Thomson & Boutilier, 2011). Considering this, the social impacts of Zonnepark will be discussed separately in the paragraph. Those impacts can be categorized into impacts on nature, impacts on landscape, impacts on recreational value and business, and financial impacts. Note impacts on the airfield, in use and safety, also became apparent within the data.

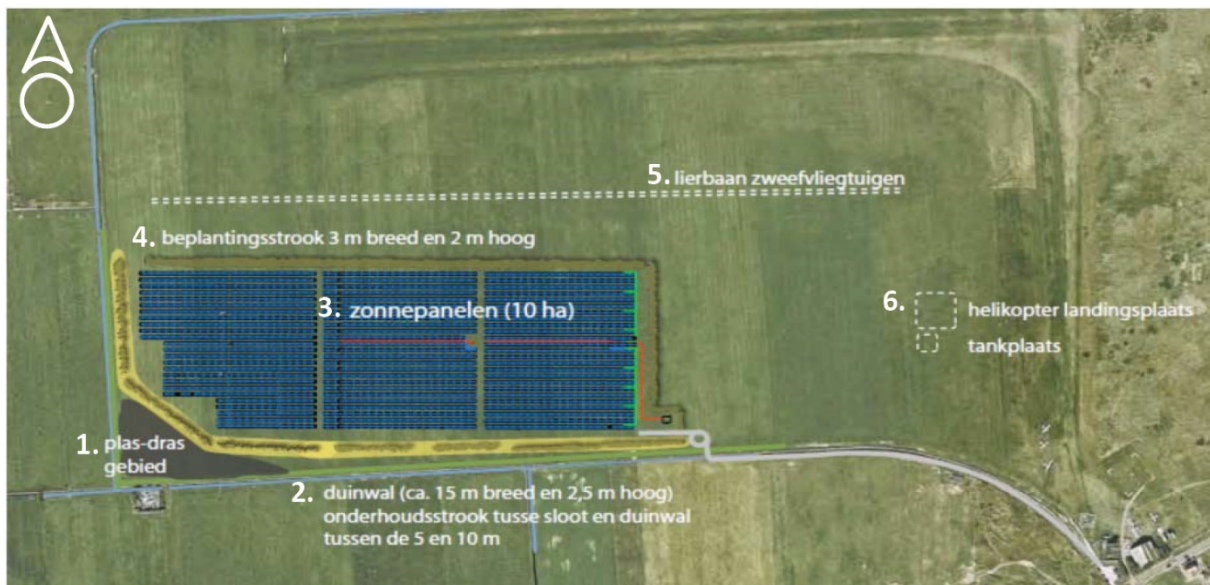
Impacts on nature

The commonly named impacts were those affecting nature. Multiple nature organisations, local residents and farmers were concerned about impacts on the bird population in the area, especially

on protected waders and geese (Farmer near the project, 2014; de Jong, 2014; Natuurwerkgroep Ameland, 2014; Residents near the project, 2014; VANG, 2014; Vogelwachten Ameland, 2014). In addition, the Province pointed out that the area was an option area for wader-habitat (Provincie Fryslân, 2014). Impacts on the roe deer population were also feared by residents near the project and the wildlife management organisation of Ameland (Leeuwarder Courant, 2014; Residents near the project, 2014). Some of the stakeholders also showed concerns that the project would interfere with other nature developments in the area (Natuurwerkgroep Ameland, 2014) and that the project would have impact on the openness and quietness of the area that is vital for the species there (Leeuwarder Courant, 2014; Vogelwachten Ameland, 2018). The formal assessment of the impacts on nature claimed that the impacts on the nature were low and that with the nature and landscaping plan (see Figure 10), the project would have a positive impact (Rho Adviseurs, 2014). The Municipality added to this, that by law and other regulations, compensation for loss of nature or mitigation of impacts was not needed, but that the nature plan was erected to add value to the plan (van Tiggelen, 2019). Natuurwerkgroep Ameland (2019) and the Province (2014) suggested that the assessment was too positive about the added value of the nature plan. Conversely, Natuurwerkgroep Ameland (2019) suggested that the nature plan could be improved and noticed that some parts of the plan were not executed as designed. Since the project had been operational for almost three years, the impacts on nature and the effects of the nature plan became visible for the stakeholders. The local Bird protection organisation finds that there is limited impact on the bird population:

‘On the airfield itself, the birds that were there are still there. Because of where the park is, there were not a lot of birds in the first place, but adjacent to it there were: Godwits, lapwings, redshanks, and oystercatchers. And these are still there. So, for that matter it was not too bad afterwards.’ (Brijker, 2018 in Zomerdijk 2018).

Additionally, residents near the project (2019) do see some positive effects on the nature and say that there are more geese because of the of the of the water element of the plan and that there are many small birds on the location of the nature plan because of the vegetation there.



Description of nature and landscaping plan

1. Wetland area
2. Artificial dunes (15m wide and 2,5m in height) with maintenance strip between the ditch and the dune of around 5 to 10m
3. Solarpanels (10ha)
4. Planting strip 3m wide and 2m in height
5. Cable/winch track for the gliders
6. Helicopter landing and tank sites

Figure 10. Nature and landscaping plan. Source: Rho adviseurs (2014) adjusted by author.

Impacts on landscape

Along with the impacts on nature, impacts on landscape and view were voiced by the different stakeholders. For instance, Residents near the project (2014) feared that the project would hamper their view of the nature lands. Other stakeholders claimed that the free and open view on the dunes of Ameland would be taken away (de Jong, 2014; Residents near Zonnepark Ameland, 2014(a); Stichting OMA, 2014; VOF Het Zwanewater, 2014). To mitigate some of the impacts on the landscape and to cover the view of the panels, the proponents made a landscaping plan that consisted of an artificial dune being placed on the south and west side of the solar farm (Kiewiet, 2019; Rho adviseurs, 2014; van Tiggelen, 2019). However, these dunes were built higher than the initial plan (van Tiggelen, 2019) and therefore the view of the dunes in the north was obstructed even more. Both the Bird protection organisation and Natuurwerkgroep Ameland found this to be destructive of the current landscape (Brijker 2018 in Zomerdijk, 2018; Natuurwerkgroep Ameland, 2019). The Natuurwerkgroep Ameland (2019) and a resident and business owner near the project (Tuinenga (2018) in Zomerdijk, 2018) also find that the whole of the solar farm should be taken out of sight. Other parts of the landscaping plan were found to be adequate by some. For instance two stakeholders feared glittering of the panels, but stated that they did not experience this (Camping Roosdunen, 2019; Tuinenga (2018) in Zomerdijk, 2018). Conversely, residents near the project (2019) find the landscaping plan a better option than a view over the solarpanels. Although they had to get used to the view and have now lost their view of the meadow birds and roe deer. Natuurwerkgroep Ameland (2019) and residents near the project (2019) see the impacts of Zonnepark Ameland as cumulative, because in the past there were multiple developments near and on the location that hurt the landscape:

'In the past there was a green plain and if you watched carefully you saw geese and roe deer and then you could see the lighthouse. Now you have a parking lot, then the airfield, a gas station and then a big glass barrier (the solar farm) and then you just see a small tip of the lighthouse. That is all in five years time.' (Natuurwerkgroep Ameland, 2019)

Impact on recreational value and business

The quote above shows that impacts on the landscape and impacts on the experience of nature can be linked. This experience has been presented as an important factor drawing tourists to Ameland (Folmer et al., 2013; Sijtsma et al., 2012; VVV Ameland, 2019). This was a reason for some of the stakeholders with recreational businesses to fear that Zonnepark Ameland would hurt the attractiveness of the island. According to them, this could lead to a decline in tourist and income derived from these tourists. This concern was voiced by VOF Het Zwanewater (2014), residents near the project (2014a), Parc Koudenbrug (2014) and within the council meetings (Gemeente Ameland, 2014). Other residents near the project, that also owned recreational accommodations, explained:

The free view that our guests enjoy will be obstructed. ... we expect a decline in guests. A decrease of revenue is hereby realistic. Our guests namely choose for quality of space, nature and a free view over the lands towards the dunes. (Residents near the project, 2014)

However, these residents did not experience this decline after the solar farm was installed (Residents near the project, 2019). Similarly, another camping site near the project did not experience any decline and mentioned that there were no negative reactions from their guests about Zonnepark Ameland, but that they only received questions from guests that were interested in the project (Camping Roosdunen, 2019). The Director of VVV Ameland (2019) also mentioned that they had not received any negative reactions from their customers or from recreation entrepreneurs. Further, he pointed out that there was no decline in guests coming to Ameland and, in contrast to that, the group of tourists interested in sustainable destinations had been growing.

Impacts on agriculture

The farmers that previously used the lands of the solar farm claimed to be impacted because their loss of farmland. This was voiced by two of the farmers that leased land at the airfield, VOF het Zwanewater (2014), Residents near the project (2014a), and by the local farmers association (LTO, 2014). According to the association, the lands were not only important for providing food for their cattle but also for the rest of their business. In the Netherlands the amount of subsidies, cattle and allowed pollutants mostly depend on the amount of farmlands a farmer leases or owns. Some farmers could be compensated with other land, but because the scarcity of farmland on the island, the remaining farmers received financial compensation (van Tiggelen, 2019). The Municipality stated that the farmland on the location was of poor quality (van Tiggelen, 2019). However, the Chairman of the LTO did mention that the farmers would prefer compensation with land over financial compensation (Gemeente Ameland, 2014). The Chairman is also Director VOF Het Zwanewater and mentioned that he was still against the project also after the compensation was given (de Jong, 2019a).

Impact on use and safety of the airfield

Besides the use of the site as farmland, the airfield is also used for aviation activities. Part of the users anticipated that the safety of their operation and their use of the airfield would be negatively impacted by the solar farm. Skydive Ameland (2014) and residents near the project (2014) anticipated that parachutists could drift away and land within the solar farm causing dangerous situations. Skydive Ameland (2014) also brought up the possible effects of glare from the panels disorienting the parachutists and the effects of an influx in wind flows over the panels that could disturb flightpaths. The glider club's use of the airfield was also anticipated to be impacted because of the risks of the cable landing in the solarpanels and thereby damaging these panels, that could not be covered by their insurance (ZCA, 2014). Adding to the concerns above, were the possible negative impacts on the recreational value of the airfield that could limit the aviation activities these businesses offered (Skydive Ameland, 2014; ZCA, 2014). These possible impacts were analysed in a safety assessment survey. This survey concluded that aviation activities on the airfield could be continued in a safe way, provided that the solar farm would be relocated some meters southward and additional safety procedures were provided to the users of the airfield (Rho adviseurs, 2014). These measures were taken (van Tiggelen, 2019) and all of these activities, except for air gliding, were being continued. The control and management of the airfield, Airport Ameland, was also positive about Zonnepark Ameland (Airport Ameland, 2019). The air glider club however claimed that their activities could not be continued because of the expected risks (ZCA, 2019). They asserted that because the Municipality would not fully compensate them for the replacement of the cable (Leeuwarder Courant, 2016a) they had to suspend their activities (ZCA, 2019).

Financial impact

Concerns about the financial impacts of the project were also discussed in the previous sections, however stakeholders also voiced another concern regarding the impacts of the project on the financial feasibility of the Municipality. VOF Het Zwanewater (2014) and residents near the project (2014) stated that the rate of return was unclear and therefore they worried that loss on the project would be recovered through municipal taxes on businesses and inhabitants of the island. This was also raised in the council meetings (Gemeente Ameland, 2014; Gemeente Ameland(b), 2015). It was shown that the project was profitable, and the negative financial impacts were not realized. This was discussed more thoroughly in the section 'Economic legitimacy' (p. 31-32).

Credibility: from acceptance to approval

In this paragraph the credibility level between the levels of acceptance and approval (Thomson & Boutilier, 2019) will be explored. This boundary consists of the proponents' commitment to social performance, the competence of the proponents and their understanding and respect of the local context. The factors of public participation and effective community engagement are, because of their importance in obtaining a SLO, explored in separate sections.

Proponents commitment to social performance

Assessment and consideration of issues

The proponents made the consideration of issues, brought forward by inhabitants of Ameland or other stakeholders, a main focus in their strategy (Kiewiet, 2019; van Tiggelen, 2019). The assessment of environmental impacts was already part of the legal procedure (Rho adviseurs, 2019). The nature and landscape organisations voiced some critique on this assessment. The organisations for protection of birds did not agree with the assessment of the impacts on birds because not all relevant information about the bird population residing on the location was used (VANG, 2014; Vogelwachten Ameland, 2014). The Natuurwerkgroep Ameland (2019) also found that both the nature and landscape values were not considered well enough by the proponents. According to them, the environmental impact assessment was of poor quality and the landscaping plan was not executed properly. They stated that the plan hurt the landscape because the walls are too high, and therefore inhibited the view on the dunes. Both should have been considered better according to them:

Well yes, I do think that on the Waddenislands these (nature and landscape values) should be considered more carefully. Well everywhere in the Netherlands, but especially on the Wadden islands.' (Natuurwerkgroep Ameland, 2019).

The issue of compensation of farmers was also contested, because not all farmers received their desired compensation in land and because some stakeholders thought that they should have been involved earlier in the process (Gemeente Ameland(b), 2014 Persburo Ameland(a), 2014). The glider club was also of the opinion that their issues were not considered adequately (ZCA, 2019), although the Municipality found that they provided them enough options to proceed with their activities (van Tiggelen, 2019). Another issue that was not considered adequately according to Natuurwerkgroep Ameland (2019), Stichting OMA, ZCA (2019) and de Jong (2014) was the issue of the location choice. They find that the process should have been more open, and they wanted to be involved earlier in the process.

Compliance with national, international, social and environmental standards

The proponents of Zonnepark Ameland had to adhere to national and regional law. Both the Province and the Municipality found that the project complied to these laws (Gemeente Ameland, 2014c; Provincie Fryslân, 2014). Recently, a code of conduct for solar farm developers has been made by the Dutch solar industry organisation 'Holland Solar' along with national and international nature and landscape organisations. This code of conduct sets standards for the development of solar farms that comprised of use of space and limiting impacts on landscape, view, biodiversity, food production, soil quality. Participations of citizens in the decision-making processes, co-ownership and financial involvement of inhabitants and businesses in the surrounding area(s) are also standards within this code of conduct (Holland Solar, 2019). ENECO has signed this code of conduct as developer of solar farms (ENECO, 2019). The aspects within the code of conduct adhere to some of the factors for obtaining SLOs, therefore compliance with this code of conduct in the approach of developers might improve the levels of SLOs obtained for solar farms.

Openness, transparency and good governance

The proponents' strategy was to be open and to involve the communities at an early stage. In the first phase of this strategy the Municipality contacted the residents and farmers near the projected location directly after they had established their preferred location (Kiewiet, 2019; van Tiggelen, 2019). One household that was contacted said that they were content with the information that the Municipality provided (Residents near the project, 2019). According to the municipal project manager, this approach was vital for the success of the project (van Tiggelen, 2019). Conversely, one farmer found that he wanted to be involved earlier in the process (de Jong, 2014). Information was presented to stakeholders in other formats, including news reports and public meetings (Kiewiet, 2019). The Bird protection association thought that, within the permit procedure, the proponents were transparent in their plans and that access was given to all relevant information (Brijker, 2018 in Zomerdijk, 2018). However, various stakeholders were of opinion that transparency was lacking, because the location was already chosen, and a location survey was held after that location was already chosen. Additionally, Natuurwerkgroep Ameland (2019) and de Jong (2014) believed that the criteria were purposefully chosen to match the location on the airfield. The director of VVV Ameland (2019) thinks that if the proponents had been more transparent when identifying a location, they would have gained more support from these stakeholders. He and the representative of a camping site near the location also asserted the proponents could provide more information about and could promote their sustainable projects more towards tourists (Camping Roosdunen, 2019; VVV Ameland, 2019).

Monitoring

Only technical performance and potential damages to the solar farm were being monitored by ENECO and the AEC (Kiewiet, 2019; ENECO, 2019). The impacts of the park however were not monitored (van Tiggelen, 2019). At first, the nature plan of the project was being monitored by the Municipality and the nature organisations that cooperated in this plan, but later this was not the case anymore. Natuurwerkgroep Ameland (2019) found this is a lost opportunity because the nature plan did not develop as expected and because they believed that the nature values within the project can be improved with additional measures.

Competence of the project proponents have to act on promises made

Not all promises made by the proponents were held. The nature component was not realised according to the initial plan, because the walls were built too high and the planting on the north and west side did not last (Natuurwerkgroep Ameland, 2019; van Tiggelen, 2019). According to Natuurwerkgroep Ameland (2019), the Municipality also lacked competence in the assessment of the impacts on nature. The glider club also claimed that the Municipality did not act on the promise made to them about compensation for the replacement of the cable (Leeuwarder Courant, 2016), although the Municipality refuted this claim (van Tiggelen, 2019). Other stakeholders were more positive about the competence of the proponents, for instance residents near the project (2019), Airport Ameland (2019) and VVV Ameland (2019) were of the opinion that the proponents did show competence within the project of Zonnepark Ameland. However, the residents near the project (2019) did question if the Municipality and the other proponents were competent enough to realize the promises made about making the island completely self-sufficient by 2030.

Proponents' understanding of and respect for the local context

Two main components of understanding and respect for the local context are provision of (proper) public participation and effective communitive engagement (Gunningham et al. 2006; Jijelava & Vanclay, 2018; Meesters & Behagel, 2017; Moffat & Zhang, 2013; Pro & Slocombe, 2014; Smits et al. 2017). These two components are considered within this section. Other components of respect of the local context were discussed previously in the section 'Socio-political legitimacy' on page 33.

Public participation

The three proponents of Zonnepark Ameland wanted to involve the communities on Ameland within their project (Kiewiet, 2019; van Tiggelen, 2019). The Municipality did this by consulting the stakeholders on and near the intended location of the solar farm. The municipal project manager believed it was vital to contact these stakeholders at an early stage, *'even before something was written on paper'* (van Tiggelen, 2019). Residents near the project (2019) were content with this approach, and local representation in the decision-making process was provided by the local energy cooperation AEC. The AEC consists of local inhabitants and business owners and these members were given the chance to vote about the project (Kiewiet, 2019). The majority of them voted in favour (Persburo Ameland, 2014). Their Director stated that if the members would have voted against the project, they would have pulled out of the venture (Kiewiet, 2018 in Zomerdijk, 2018). Additionally, the Municipality cooperated with different nature and landscape organisation in the design of the nature component (Brijker, 2018 in Zomerdijk 2018, Natuurwerkgroep Ameland, 2019; van Tiggelen, 2019). Both the Bird protection and the Nature organisation were not completely content with the design and realisation, because they found the nature component too small and found that the plan was not designed in consideration of the conditions and context of the area (Brijker, 2018 in Zomerdijk, 2018; Natuurwerkgroep Ameland, 2019). The Natuurwerkgroep Ameland (2019) wanted additional changes to the plan in order to improve the nature values of the area and Vogelwachten Ameland wanted to be involved in the assessment of impacts on the bird population (Brijker, 2018 in Zomerdijk 2018). Most opposition voiced by stakeholders against the project concerned the location choice of the solar farm. Other stakeholders, like Stichting OMA (2015), also wanted to be involved in the location choice and asked: *'Why are citizens not involved in this?'* A local council member, after hearing the opposition against the location, even proposed to have a referendum about the project at that location (Wijnberg, 2014), but this request was not honoured by the majority of the council (Gemeente Ameland, 2014b). VVV Ameland (2019) believed that earlier involvement of the different stakeholders in the decision-making, including in the location choice, would have helped to get more acceptance/approval:

'They (the proponents) should have involved the stakeholders in the surrounding area earlier. Now the location was already decided for. They should have consulted with the people about where the solar farm could have been placed. Maybe they would have come to the same location, but now it was set to much in stone and this evokes annoyance with people.' (VVV Ameland, 2019).

They also found that the tourists could have been involved by surveying them at the main office of the VVV (VVV Ameland, 2019).

Community engagement

Public participation can be seen as a component within community engagement strategies; in this section the other components of community engagement are covered. The proponents agreed that the AEC would be responsible for the community engagement, although the Municipality also contributed to this process (van Tiggelen, 2019). Their engagement strategy started with the consultation of stakeholders near and lessees of land at the site (van Tiggelen, 2019). Next, the AEC held public meetings and published news reports via a local news website to make their plans available (Kiewiet, 2019). The owners of the solar farm also wanted to provide benefits to the local communities, by offering them ownership in the project. They did this by making 1.200 bonds for a total amount of €300.000 available. The criteria for applicants was that they either had to be an inhabitant of Ameland or that they had an economic connection with the island (Kiewiet, 2019). Multiple bonds per applicant could be bought, however applications with a lower amount of bonds got priority over applicants with higher amounts of bonds (AEC, sd; Kiewiet, 2019). According to ENECO, local ownership is an important strategy in gaining approval for projects, because through this the project can add value for the local communities and they found that working with local cooperation is a good way to gain goodwill within these local communities (ENECO, 2019).

Another group of stakeholders on the island, the tourist and the tourist sector, were not part of the engagement strategy (Kiewiet, 2019). The tourist board and local camping facility believed this to be a missed opportunity to promote the sustainable character of the island (Camping Roosdunen, 2019; VVV Ameland, 2019). VVV Ameland (2019) adds, that they wanted to be involved more in the process leading up to the project.

The farmers' association also wished that they had been involved earlier and wanted compensation in form of land rather than financial compensation (LTO, Noord 2014; de Jong, 2015). The nature and landscape organisation also desired to be involved earlier, in the impact assessment stage (Brijker, 2018 in Zomerdijk, 2018; VANG, 2014) and in the phase after the realisation of the project to make additional adaptations to the nature plan (Natuurwerkgroep Ameland, 2019). Additionally, the glider club were not content with the way they were treated by the Municipality (ZCA, 2019). Additionally, not involving the communities in the location choice was a significant factor of the opposition against the project. In contrast, other stakeholders do find that the local embeddedness of the project, through involvement of the AEC and the Municipality of Ameland, was a good strategy that strengthened the trust and acceptance of the project (Camping Roosdunen, 2019; Residents near the project, 2019; VVV Ameland, 2019). VVV Ameland (2019) adds to this that Zonnepark Ameland is exemplary for the identity of Ameland (see also the quote on p.33).

Indicators of approval

Few comments were made that matched the indicators of approval. An inhabitant of Ameland said he thinks it is good that the proponents '*put their neck on line*' for a sustainable island (Kiewiet, 2015). The civil servant responsible for the project also thinks that a lot of islanders are proud of the project:

'Well, in the beginning, some people were a bit against the project, but when they heard that the park was installed and they were on vacation in Limburg (South-NL) for instance, then they were proud of it, even though they had nothing to do with it. ... So now you hear that more people are proud of it that those who say they are against it' (van Tiggelen, 2019).

Trust(worthiness): from approval to psychological identification

Psychological identification is the highest level of the SLO continuum and follows out of high levels of acceptance and approval (Thomson and Boutilier, 2019). Trustworthiness is analysed in this paragraph by an assessment of the overall trust that the stakeholders have in the proponents, how active the communities were involved, the extent to which attention was paid to marginalized groups and the extent to which the proponents have shown understanding of the plurality of the communities. Additionally, the presence of the physical indicators of trust: political support, co-management of activities and cooperation against critics, are considered.

Trustworthiness in general

Naturally the stakeholders that were positive about the legitimacy (acceptance) and credibility (approval) of the project also trust the proponents of Zonnepark Ameland more than the stakeholders that were negative about the factors making up these two boundaries.

Stichting OMA (2015) for instance is of the opinion that the council has been fooled by the proponents because: "*the Municipality first said to not want to spend money on the project, but later did contribute to the solar farm.*" The former Mayor was also distrusted by some of the members of the communities on Ameland, because his active involvement in decision-making, especially concerning sustainable projects like Zonnepark Ameland (Fierant, 2017).

Local farmer and recreational entrepreneur de Jong (2019a) adds to this that the proponents initiated the project mainly because they wanted to get a good image with the public. The air glider club declares to be highly disappointed in the Municipality and to 'not trust them anymore' (ZCA, 2019). Conversely, the stakeholders within the vicinity of the project, Airport Ameland (2019), Camping Roosdunen (2019), Tuinenga, 2018 in Zomerdijk 2018 and residents near the project (2019) all indicate that they trust the proponents. The residents near the project also assert that this trust should be given to these proponents:

Yes, we do trust them, we have nothing negative to say about them. They do their best, all three. They want to realise it all (the self-sustainability of the island). Therefore we should give this our trust. (Residents near the project, 2019).

Active involvement of the communities within the decision-making process

The involvement of the communities within the decision-making process is covered within the 'Public participation' section on page 41 in the Credibility paragraph.

Understanding of the plurality of communities

The proponent responsible for engagement with the communities, the AEC and the Municipality, showed some indication that they understood the plurality of the communities on Ameland. The AEC found it important that an open discussion was held where all inhabitants could voice their opinion and thought that with a local cooperation this discussion could be enhanced (Kiewiet, 2019). However, VVV Ameland (2019) asserted that the tourists were not considered within this discussion and wished that they had a voice in the decision-making. The Municipality stated to understand the different stakeholders in the project, for instance the farmers and their dependence on land. They also asserted that there were a lot of different stakeholders that all wanted something different per square meter on the island. However, in the interview the project manager did question the legitimacy of some of the opposition by writing them off because they did not have enough support or by stating that their claim of impact was not legitimate (van Tiggelen, 2019).

Attention to marginalized groups

Within the Zonnepark Ameland, there was no attention given to marginalized groups. The AEC did try to make the bonds accessible to as many inhabitants as possible, by giving participants with the least amount of bonds priority over participants that wanted to buy more bonds (van Tiggelen, 2019). Additionally, ENECO (2019) stated that they did not have strategies for marginalized groups within the communities. In wind energy projects, ENECO did claim to provide free benefits to residents near the wind turbines, but this was not the case with solar projects, because according to them the impacts of solar farms are smaller. They also believed that enough benefits were provided by producing renewable energy for the local communities in the vicinity of the project (ENECO, 2019).

Trust indicators

In the following sections the three indicators of trust are considered.

Political support

From the first phase of the project, there was political support for the solar farm. The Mayor even was the one who initiated the project (ENECO, 2019; Kiewiet, 2019; van Tiggelen, 2019). Furthermore, the council of the Ameland had set a goal for the island to become self-sustaining by 2030 (Gemeente Ameland, 2019) and in the final decision-making moment the whole council voted in favour of the project (Gemeente Ameland, 2015a). Some parties did voice critique during the process and voted against some earlier decision making moments (Gemeente Ameland, 2014c), however the majority of the council always was in favour (Gemeente Ameland, 2014; Gemeente Ameland, 2014d). The municipal project manager thinks that the goal set by the council was decisive

for this political support, but also the fact that everybody of the island could profit from the project and because the farmers were compensated (van Tiggelen, 2019).

Co-management of activities

Two of the proponents are local stakeholders and according to ENECO (2019) this form of local cooperation was their preferred way to develop solar projects. Various stakeholders were positive about the local involvement within the project (Residents near the project, 2019; Tuinenga, 2018 in Zomerdijk, VVV Ameland, 2019). Another activity where the proponents cooperated with other stakeholders was the design of the nature plan, although both the Vogelwachten Ameland and the Natuurwerkgroep were not completely satisfied with the eventual plan and its' outcomes (Brijker, 2018 in Zomerdijk 2018; Natuurwerkgroep Ameland, 2019).

Cooperation against critics

Stakeholders that showed support for the project, like VVV Ameland (2019) did not agree with the argument used by opposition that the project could impact the recreational value of Ameland and claimed that there were no negative impacts on tourism on Ameland. Support was also shown on social media in comments on critical posts about the project. One inhabitant of Ameland for instance thought that it was good that the proponents '*put their neck on the line*' (Kiewiet, 2015) and another considered the project a good start to come to a sustainable future for the island (Spoelstra, 2015).

Discussion: SLO outcomes

The results of the case study of Zonnepark Ameland show that some levels of SLOs were obtained, from the stakeholders within the related communities. However, there were also stakeholders that voiced critique on the project and its proponents and therefore withdrew SLOs or gave lower levels of SLOs. The accounts of these and other stakeholders along with other data sources were used as input for the analyses of Zonnepark Ameland based on the theoretical framework of the SLO. Within this framework four different levels of SLOs are distinguished: withdrawal, acceptance, approval and psychological identification. The boundaries between these levels are formed by legitimacy, between withdrawal and acceptance, credibility, between acceptance and approval, and trustworthiness, between approval and psychological identification (Jijelava & Vanclay, 2018; Thomson & Boutilier, 2011).

Stakeholders comprising the communities related to the case of Zonnepark Ameland were mostly local and were relevant because of their interest related to the site or project and/or their proximity to the project. Most of the impacts that were felt and feared by the communities consisted of impacts on landscape, nature and the use and safety of the airfield. Additionally, impacts on agriculture and other financial impacts caused by inadequate compensation were claimed. Apparent in these impacts was the limited and contested space on the island. For every new development on Ameland, other interests are hurt, and other functions are limited. Some of the stakeholders did not give Zonnepark Ameland SLOs at the acceptance level; they withdrew their SLO. This was not only apparent in the filed lawsuit and other threats of lawsuits, but also in the contestedness of some procedures taken and in the perception of some (former) users of the airfield that adequate compensation was lacking. The compensation of farmers in land was for instance limited because of the lack of available land elsewhere. Additionally, the financial involvement of the Municipality as proponent caused a conflict of interest between the role as proponent, and its responsibility to ensure procedural fairness and to maintain impartiality. Some concerns about the feasibility of the project were also voiced, however economic legitimacy has been shown with the profitability of the project, the local ownership within the solar farm and the distribution of benefits to local inhabitants and business owners. This contributed significantly to the acceptance of the project. Regarding the respect of local context, some stakeholders found that the solar farm adhered to the local self-sustainable culture of the island. However, other stakeholders, especially related to the use of the site and interest in nature, claimed that respect and understanding of the local situation was lacking. This caused the impacts assessment on nature and the landscaping and nature plan to lack quality, which caused lingering issues within the case.

This respect for the local context was also shown in the local representation and ownership of the AEC and the Municipality within the project, which positively contributed to the factor of community engagement and therefore to obtaining SLOs at the approval level. However, a discrepancy emerges between the conflict of interests of the Municipality and the appreciated involvement of the Municipality. Although public participation was provided in some of the decision-making processes, it was lacking during decision-making process regarding the location of the project, which caused much resistance of several stakeholders. After the construction of the solar farm, monitoring of the nature plan and impacts was lacking. The construction of this nature plan was also not realised as designed and promised. This caused resentment of the nature organisations on the island because they found that their issues were not considered adequately by the proponents. Additionally, the glider club and the farmers, as (previous) users of the airfield, claimed that their concerns were not considered adequately either. The glider club found that they

should have been compensated for the impacts on their use of the airfield and the farmers would have preferred compensation in land instead of financial compensation. Furthermore, as indicator of approval, the communities of Ameland did show signs of pride of Zonnepark Ameland.

SLOs of the highest level, psychological identification (Thomson & Boutilier, 2011), is mainly gained through high rates of trust (Jijelava & Vanclay, 2018; Moffat & Zhang, 2014; Thomson & Boutilier, 2011). This trust was given by some members of the communities, for instance by residents and businesses near the solar farm as well as the tourism organisation. Some of the opposing stakeholders however showed that they did not trust the proponents. Although the proponents did indicate that they understood the plurality of the communities, some of the stakeholders within these communities were not included into the community engagement strategies and public participation processes, namely marginalized groups within the communities of Ameland, tourists and the tourism sector. Other signs of psychological identification were apparent in the political support for the project and in the cooperation against critics by some part of the local stakeholders. The proponents also conducted co-management of activities by cooperating with nature organisations in the design of the nature plan. However, these nature organisations were not content with the outcomes of this plan.

From these results, it can be concluded that some stakeholders did not give their SLOs, but that others did give of their SLOs, even reaching high levels of approval and psychological identification. In the case of Zonnepark Ameland, the stakeholders that did not give their SLOs were stakeholders that also claimed to be impacted the most by the project, namely some of the nature and landscape organisations and some of the (former) users of the location. In their perception, this was caused by the lack of adequate consideration of their issues and a lack of adequate consideration of the impacts caused by project. A related cause of this can be found in the limited and contested space on the island. In addition, the lack of participation in the decision making regarding the choice of location and the conflict of interest of the Municipality are causes of lower levels of SLOs. An improved approach, with consideration of these factors, could have increased the likelihood of the project obtaining SLOs from the communities and therefore could have resulted in higher level-SLOs. This could have been done by the local energy community AEC taking up a bigger part within the solar farm and with the Municipality withdrawing as proponent. Thereby the appreciated local representation and ownership could be retained and perceptions of partiality could be removed. The Municipality could have kept their role as facilitator of the public participation processes and to ensure all voices and issues were heard and considered. Thereby, the Municipality of Ameland could also ensure good governance by critically assessing the project and its proponents without assessing their own conduct. When this governance is not in place, Prno & Slocombe (2014) and Zhang et al (2015) claim that the acceptance, approval and trust of the industry of renewable energy could be damaged and therefore limiting other renewable projects from obtaining SLOs. Factors that did lead to acceptance and higher levels of SLOs could be found in the local embeddedness of the project. Both the local ownership of the solar farm and the local representation in the decision-making, that were provided by the local cooperation AEC, were important for this embeddedness. The community engagement and public participation strategies also contributed to higher level SLOs. The cooperation with other stakeholder and early engagement of relevant communities were important parts of these strategies. Another crucial factor of higher SLOs obtained were the adherence of the project to the self-sustainable culture and the sustainability goals of the Municipality. Higher levels of SLOs could have been obtained when the public participation and engagement strategies would have been applied earlier in the decision-making process and with consideration of more stakeholders, foremost the marginalized groups within the communities of Ameland.

Conclusion

The case study of Zonnepark Ameland was conducted to explore how renewable energy projects, especially solar farms, can obtain social licences to operate. As the urgency and measures for a future with renewable energy sources increase, this question will become even more relevant. The results identified some factors that can increase the levels of SLOs obtained, but also showed some factors that can cause a decrease the levels of SLOs. The SLO proved to be a practical and thorough concept to consider renewable energy projects. However, as the case of Zonnepark Ameland demonstrated, obtaining social licences is not a simple and straightforward task.

First, the case made clear that there is not one SLO or one level of SLO given by all stakeholders in one community. Rather, it confirms the notion of Dare et al. (2014) that multiple SLOs must be obtained from different stakeholders and communities, because of their different needs, aspirations and interests. Zonnepark Ameland also showed that the relevant communities consist of local stakeholders that are relevant because of their interest and/or proximity. That local context is an important factor in obtaining SLOs was also evident within this case. For instance, when space is limited and highly contested, the rate of SLOs might decrease, because projects like solar farms take up a relative large amount of space. However, when these project adhere to local principles, like self-sustainability, SLOs might increase. Both theory and Zonnepark Ameland showed that there are strategies that can increase the likelihood of SLOs given by local communities, even when space is highly contested. The case for instance highlighted that the financial involvement of governments as proponents can hamper the perception of procedural fairness and the acceptance level of SLOs. Therefore, this should be avoided to increase the possibility of acceptance. However, a dichotomy emerges on this point because the case also raised that involvement of the Municipality can enhance the trustworthiness and reputation of projects. A more active role of local energy communities, like the AEC on Ameland, could replace governments and ensure these factors. A more facilitating role of governments could improve the perceptions of impartially and procedural fairness and therefore contribute to good governance of projects. This facilitative role could consist of ensuring that proper public participation and community engagement processes are conducted by the proponents. Furthermore, the case shows that likely social impacts of renewable projects, foremost of solar farms, are impacts on nature, landscape and current use(s) of the locations of these projects. Both an inadequate assessment of these impacts and inadequate consideration of issues along with deficient compensation or mitigation efforts can result in lower levels of SLOs and even in withdrawal of SLOs. Therefore, to increase levels of SLOs, strategies should be taken to mitigate or compensate for these impacts caused by the projects and to consider the issues presented by the impacted communities.

Furthermore, Zonnepark Ameland shows that renewable energy projects can obtain higher levels of SLOs by ensuring local embeddedness of these projects that can be achieved through local ownership and local representation in these projects outside of local governments. For instance, like in Zonnepark Ameland, with local energy communities initiated by local inhabitants. That public participation is a factor that is important throughout all levels of SLOs is also confirmed by this case. The results stress that in order to reach SLOs, participation should be provided even at early stages of projects, including the decision-making regarding the choice of location. In regard of another important factor of SLOs, community engagement, the case of Zonnepark Ameland shows that higher levels of SLOs potentially can be obtained with a broader engagement of relevant communities through a distribution of benefits that also encompasses marginalized groups.

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