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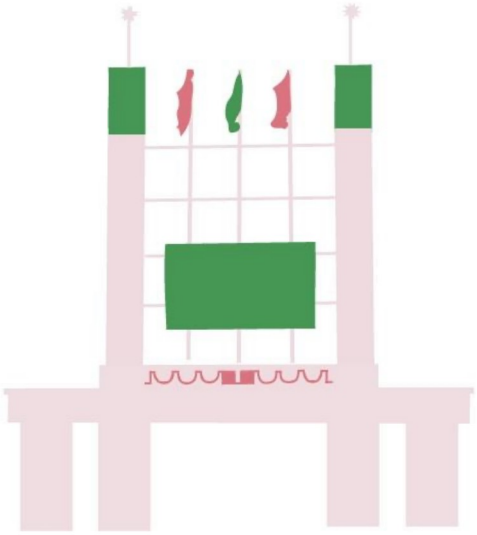

Strategic Fit of Solar Power Solutions for a Non-Electricity-Producing Company

A Case Study of Liseberg AB

Master's thesis in Management and Economics of Innovation

ELIN FREDRIKSSON
STINA HAGLUND

DEPARTMENT OF TECHNOLOGY MANAGEMENT AND ECONOMICS
DIVISION OF INNOVATION AND R&D MANAGEMENT

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Report no. E2023:090
Department of Technology Management and Economics
Chalmers University of Technology
SE-412 96 Gothenburg
Sweden
Telephone + 46 (0)31-772 1000

Cover:
An illustration of Liseberg's main entrance

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SUMMARY
The escalating impacts of climate change necessitate societal action to transition towards a decarbonised economy. In this green transition, electrification of society is a critical component which implies more renewable electricity in the grid resulting in a more volatile electricity market. For Non-Electricity-Producing (NEP) companies, the importance of implementing new ways of strategically managing electricity supply becomes apparent. Solar power is one of several renewable electricity production methods, which is assessed as being suitable for NEP companies, both because of its relatively low cost, and its flexible applications. However, little guidance exists for NEP companies wanting to integrate solar power into their electricity supply. This pertains specifically to the strategic fit of various solar power solutions with their current business operations. To this end, this thesis sets out to, through a single-case study, first, identify available solar power solutions for NEP companies to incorporate, and second, provide guidance regarding strategic fit between the solutions and the NEP company. Hence, the strategic fit analysis examines how well a new element (the solar power solution) fits with the NEP company, considering both an internal dimension, consisting of vertical and horizontal strategic fit, and an external dimension of strategic fit.

To truly understand the strategic dimensions and the culture of the case company, and what solar power solutions that exist in their vicinity, a qualitative case study was carried through. This qualitative case study was based on semi-structured interviews with 10 employees from different functions at the case company and secondary data such as websites, market reports and internal documents. Further, a solution by solution approach to analyse each solar power solution's strategic fit to the case company was made.

We identified four main solar power solutions: Host-Owned, Power Purchase Agreement (PPA), Shared Solar, and Guarantees of Origin (GOs). Out of these four solutions, PPA and Shared Solar displayed the highest degree of strategic fit to the studied NEP company. The findings offer valuable insights for NEP companies planning to incorporate solar power, emphasising that a strategic fit analysis could serve as good guidance for decision-making. The analysis further reveals that the vertical and external dimensions of strategic fit seem to play a crucial role in determining if solar power is a good fit for the NEP company. The horizontal fit, however, seems to be of higher value when determining which of the available solutions to incorporate.

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Keywords: solar photovoltaics, solar power, strategic fit, non-electricity-producing (NEP) company

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Elin Fredriksson and Stina Haglund, Gothenburg, June 2023

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1. Introduction

To overcome the challenges of climate change and environmental degradation, the European Union (EU) launched The European Green Deal in 2019, a package of policy initiatives aiming to steer the EU into a green transition where climate neutrality is reached by 2050 (European Council, 2022). A critical component of the green transition is the electrification of society as it has the potential of phasing out the emissions from and dependency on, finite resources if replaced with renewable production methods (de Maere d'Aertrycke et al., 2020). However, the intermittency, of those production methods, for example, wind and solar power generation, implies both partial unpredictability and non-controllable variability (Perez-Arriaga & Batlle, 2012). An electricity system reliant on a larger share of renewables thus becomes more volatile (E.ON Energidistribution, 2022), both in terms of price and supply (Svenska Kraftnät, 2022).

Electrification creates challenges for non-electricity-producing (NEP) companies, companies whose core business lies in other areas than electricity production. Price fluctuations can imply a financial risk (PwC, 2022), power deficits could lead to non-socially critical businesses being temporarily disconnected from the grid (Swedish Energy Agency, 2022), and regulations put pressure on companies to contribute to the green transition (European Union, 2015). This creates a need for NEP companies to strategically manage and secure their electricity supply to a much higher extent than previously (IMD, 2021).

Solar Photovoltaics (PV) is a renewable electricity production method whose levelized cost has drastically decreased over the last decade (Ray, 2021). Further, the main advantages of solar PV is the long lifespan of the systems (approximately 30 years), its wide range of possible applications and its low maintenance need (Mundo-Hernández et al., 2014). Thus, it is seen as an attractive technology for NEP companies to invest in. Once a solar PV system is financed and installed, solar power can be produced at an almost zero marginal cost (Engelken et al., 2016), which results in adding more renewable electricity to the system and a lower dependency on the grid while contributing to the green transition (IMD, 2021).

However, the incorporation of solar power does not only imply benefits for NEP companies but can also be connected to challenges. There are several solar power solutions available for NEP companies to incorporate (e.g. Altunay et al., 2021; Bankel & Mignon, 2022; Horváth & Szabó, 2018; Huijben & Verbong, 2013), and due to the scarce guidance, it can be hard to know which one to choose. This is when the concept of strategic fit can be considered, which is described in the literature as being the degree to which the strategy, resources and capabilities of a company fit with the demands and

requirements of its external environment (Porter, 1996; Wadström, 2019). If the strategic fit is high, it could lead to synergies where different activities reinforce each other and create a competitive advantage (Kathuria et al., 2007; Porter, 1996). However, if low, different parts of a business can erode or cancel out the value of each other, and hence harm the business (Porter, 1996). This logic remains true also when incorporating a new element into an existing business (Altunay et al., 2021). As the available solar power solutions differ in terms of, for instance, location, ownership, and maintenance responsibility, and as solar power production often is far from the NEP company's core business, it might be as important as hard to decide which solution to adopt to ensure that it strengthens the overall business and not harms it (Porter, 1996). For example, the different solutions might require various degrees of additional resources or capabilities being acquired (Grant, 2021; Porter, 1996). Choosing a solution that is compatible with the business and does not create goal conflicts is crucial for successful incorporation.

Extensive research has been conducted regarding, first, possible solar power business models from the electricity utility companies' perspective (Bankel & Mignon, 2022; Drury et al., 2012; Horváth & Szabó, 2018; Overholm, 2015) and secondly, regarding the importance of strategic fit (Grant, 2021; Porter, 1996; Venkatraman & Camillus, 1984; Wadström, 2019). Moreover, research has been made, by for instance Altunay et al. (2021), regarding how to assess strategic fit when electricity utilities want to incorporate solar power business models into their operations. However, there is a gap in research regarding the strategic fit for NEP companies wanting to use solar power, which needs to be filled to facilitate such companies making informed decisions and, by extension, contributing to the deployment of solar power production in society.

1.1. Thesis Aim and Research Questions

In light of this introduction, this thesis aims to provide guidance for a NEP company wanting to incorporate solar power into their electricity supply. This guidance consists of both an overview of available solar power solutions and how to assess these solutions in relation to strategic fit with the NEP company.

More specifically, the two research questions that will be investigated are:

RQ1: *Which solar power solutions are available for a NEP company?*

RQ2: *How do the different solar power solutions compare with regard to their strategic fit with the NEP company?*

1.2. Limitations

The first limitation of the thesis is that it will focus on a large NEP company in Västra Götaland, Sweden and the circumstances they are surrounded by. As regulations, taxes and subsidies regarding electricity production and consumption differ between countries and regions, and as the industry in which the company operate influence their structure, the location and industry of the company will play a role in regard to which parts of the thesis could be accommodated by other companies in other industries and geographical locations. Moreover, the thesis will be confined to solar PV as a source of renewable electricity. The decision is based on the wide variety of possible applications, a solar PV system's long lifespan and its relatively low maintenance. Lastly, the focus of the thesis is the actual supply of solar power to the NEP company, and solar power solutions that only imply financial return, e.g. solar power stocks, will thus not be included.

2. Theoretical Framework

2.1. Solar Power Solutions

Solar power production has been discussed in the literature mostly in relation to different business models, by which solar firms create, deliver and capture value (Altunay et al., 2021). The business models can facilitate adoption by incumbent energy utilities (Altunay et al., 2021) or accelerate the diffusion of distributed PV systems (Horváth & Szabó, 2018; Strupeit & Palm, 2016; Zhang, 2016). Most of the literature in the area focuses on describing different solar power solutions from the perspective of the solar firms offering them. However, these solutions can also be seen from the perspective of the adopter, such as a non-electricity-producing (NEP) company, that aims to consume the produced solar power. Based on the literature on solar firms' business models, five solar power solutions for adopters will be presented in the following sections: *host-owned*, *leasing*, *Power Purchase Agreement* (*PPA)*, *shared solar*, and *contracts with Guarantees of Origin*[1].

2.1.1. Host-Owned Solution

A host-owned solution implies that a solar PV system is financed and owned by the adopter (Altunay et al., 2021; Sauter & Watson, 2007) and is also installed on the adopter's premises (Bankel & Mignon, 2022). With this solution, the adopter is the property owner, solar PV system owner, and electricity consumer and is also responsible for the installation and maintenance of the system (Bankel & Mignon, 2022). Frantzis et al. (2008) further separate roof-mounted systems into retrofit and new construction, i.e. if the solar PV system is mounted onto an existing building or included in the construction of a new one. Moreover, some solar firms also offer to manage all one-shot activities related to the installation of the system (Bankel & Mignon, 2022), and some also provide maintenance services (Huijben & Verbong, 2013), relieving the adopter from all activities related to the solar PV system.

With this solution, the adopter becomes less dependent on electricity utilities (Sauter & Watson, 2007) because of increased self-sufficiency (Strupeit & Palm, 2016), which can result in a smaller electricity bill (Horváth & Szabó, 2018; Strupeit & Palm, 2016). Some in-house production of electricity reduces an adopter's power withdrawal from the grid, and the reduction of the electricity bill is what drives investment payoff (Horváth & Szabó, 2018). Horváth and Szabó (2018) further suggest that adopters can benefit from feed-in tariffs (FiTs) on the excess solar power that is fed onto the grid, which can provide a competitive return on investment. However, barriers for an adopter to adopt the host-owned solution is often the high upfront and maintenance costs (Zhang, 2016). Further, the adopter needs to

[1] In the solar business model literature, more solutions are discussed. However, only solutions that supply the adopter with solar power will be included in the theoretical framework, in line with the aim of this thesis.

possess a suitable roof where the system can be installed, e.g. the surface needs to be sufficiently large, have limited shading and be oriented towards the sun (Huijben & Verbong, 2013).

2.1.2. Leasing Solution

An adopter can acquire a solar PV system through a leasing solution (Drury et al., 2012). In such a solution, another actor owns and operates a PV system located on the adopters' premises and leases the system to the adopter that uses it to produce electricity (Altunay et al., 2021; Bankel & Mignon, 2022; Drury et al., 2012). According to Drury et al. (2012), this solution can heavily reduce or eliminate investment costs for the adopter, while also reducing technology risk and complexity. Further, the solution offers immediate cost savings to the adopter rather than long payoff times, as in the case of the host-owned solution. This solution is formulated as a lease contract where the adopter give access to their roof and can use the system that is installed on it for a monthly fee during a set period of time, usually 5-20 years (Bankel & Mignon, 2022).

2.1.3. Power Purchase Agreement Solution

In a Power Purchase Agreement (PPA) solution, the adopter signs a long-term contract with another actor that finances, instals, manages, and owns a solar PV system, which is usually on a large scale, for the adopter (Bankel & Mignon, 2022; Overholm, 2015; Strupeit & Palm, 2016). The PPA contract usually last 15-20 years and binds the adopter to purchase the produced solar power at a set price (Overholm, 2015; Strupeit & Palm, 2016) while relieving them from the high initial investment and responsibility related to the maintenance of the installed system (Bankel & Mignon, 2022; Overholm, 2015). The solar PV system can in this solution be located on the adopter’s premises or another location and provides the adopter with a long-term supply of solar power at a fixed price (Bankel & Mignon, 2022) through monthly payments (Zhang, 2016). According to Bankel and Mignon (2022), the PPA solution implies a large-scale solar PV system, i.e. a solar park, which differentiates it from the leasing solution that can be of a smaller scale and installed on the adopter’s roof. Another differentiating factor between the two solutions is that the PPA solution offers the adopter solar power (Bankel & Mignon, 2022), while the leasing solution offers the adopter access to a solar PV system.

2.1.4. Shared Solar Solution

The shared solar (Hess & Lee, 2020) solution, also mentioned as community solar (Altunay et al., 2021; Asmus, 2008; Hess & Lee, 2020; Huijben & Verbong, 2013), community distributed generation (Hess & Lee, 2020), or community-shared (Horváth & Szabó, 2018), allows an adopter that do not have the proper resources and physical capacity required to install a solar system on their own premises to buy shares in, or subscribe to, a solar park (Altunay et al., 2021; Asmus, 2008; Hess & Lee, 2020; Huijben & Verbong, 2013; Zhang, 2016) that is connected to the utility grid (Zhang, 2016). The adopters are

compensated through credits on the electricity bill (Hess & Lee, 2020; Zhang, 2016), and the billing approach can be either virtual net metering (Funkhouser et al., 2015; Horváth & Szabó, 2018) or joint ownership (Funkhouser et al., 2015).

Further, the participating adopter does not have to make a high initial investment or perform any technological activities related to the system (Asmus, 2008; Huijben & Verbong, 2013). Instead, the shared solar park is administered by a utility, a non-profit organisation or a solar project developer (Horváth & Szabó, 2018). According to Horváth and Szabó (2018), the main benefits for an adopter with the shared solar solution are the possibility to use green electricity without installing a PV system, a reduction of the electricity bill, no high upfront investment, and a higher degree of flexibility. The authors state that the share or subscription can be resold to another adopter, which implies flexibility in terms of being able to purchase more shares in the solar park if more solar power is needed or wanted, or the possibility of selling the shares if the adopter's financial conditions change or if wanting to invest in other electricity production methods.

2.1.5. Guarantees of Origin Contract Solution

An adopter can also purchase solar power by complementing the electricity contract with Guarantees of Origin (GOs), the most common *energy attribute certificate* available in the European Union (Wimmers & Madlener, 2020). All producers of renewable electricity can request GOs for every MWh that is fed into the grid (Wimmers & Madlener, 2020). The GOs can then be purchased by adopters, which allows the adopters to prove that the origin of their used electricity is from solar, since the amount of solar power has been produced somewhere in the system. According to Wimmers and Madlener (2020), there is currently an oversupply of GOs on the market, which implies that the adopter can purchase the GOs at a favourable price. However, it also implies that additional solar production capacity will not be built since the demand for GOs is low. The adopter purchasing solar power through a GOs contract will thus only lead to other customers using less solar power, and not contribute to adding more solar power to the system.

2.2. Strategic Fit

The different solar power solutions for adopters differ in terms of which physical resources are needed, e.g. suitable roofs (Huijben & Verbong, 2013), how large of an investment is needed, i.e., high upfront investment (Zhang, 2016) or monthly payment, and how long-term commitment the solution implies, i.e. long payoff time, long-term contract or a more flexible commitment that can be waived (Horváth & Szabó, 2018; Overholm, 2015; Strupeit & Palm, 2016). The solutions also differ in terms of if they contribute to more solar power being added to the grid and how the electricity is supplied to the adopter. It can be difficult for adopters to decide which solution would be the best fit for them. Strategic fit is a

concept that can be used to evaluate the fit between a new element and the existing organisation (Altunay et al., 2021) and can be used to evaluate the different solar power solutions based on the strategies, resources, capabilities, and external environment of the adopter, in this case, a NEP company.

Strategic fit descends from the strategic management literature and is generally defined as the appropriateness of various elements to one another (Altunay et al., 2021; Chorn, 1991; Kathuria et al., 2007; Venkatraman & Camillus, 1984). Strategic fit is a well-established concept in the strategic management literature and has been approached from different perspectives, mostly depending on how organisational performance is defined (for instance, as profitability, market share, good value for money, or stable employees) (Chorn, 1991). However, Chorn (1991) emphasises that despite the lack of common consensus of what high performance implies, there is a common perception that strategic fit is what drives it. In this vein, Grant (2021) stresses that one major reason why companies fail is having a strategy that lacks the proper consistency with the external or internal environment. Chorn (1991), however, stresses the fact that strategic fit is an ideal state for any company that should persistently be aspired for, but that it is rarely achieved due to the dynamic nature of the competitive situations in which firms operate. Additionally, the author emphasises that the management of a company can make a decision that would temporally create a strategic misfit to increase the fit of future scenarios.

Unsurprisingly, as a consequence of the broad nature of the strategic fit concept and the many different ways of defining organisational performance, a broad variety of frameworks for different purposes have been developed. For instance, to evaluate an organisation internally between hierarchical levels (Kathuria et al., 2007), the need to leverage IT strategy with business strategy (Henderson & Venkatraman, 1999), and for the purpose of achieving the goals of a company by carefully managing and controlling its value chain (Trevor & Varcoe, 2017).

The concept of strategic fit is most commonly used to evaluate the internal elements of an organisation to each other and to the external environment of the firm (Chorn, 1991; Kathuria et al., 2007; Trevor & Varcoe, 2017; Wadström, 2019). However, it is also used to assess a new element's fit to the organisation and its environment. For instance, Cooreman (2007) evaluated what made companies invest in energy efficiency and concluded that companies need to align their investments with their overall strategy in order to maximise the benefits of such investments. Moreover, Altunay et al. (2021) used strategic fit to assess how prone electricity utility companies were to adopt new business models of solar power into their traditional business models for selling electricity. In such assessments, common parameters for assessing the new element's fit to the organisation are internal and external fit. The internal fit is consequently divided into vertical fit, which refers to the new element's fit to the overall strategy of the organisation, and horizontal fit, which evaluates the fit of the new element and the units

and functions of the organisation. Furthermore, the external fit refers to how well the new element contributes to fulfilling the demands and pressures of the organisation's environment.

2.2.1. Internal Fit

Vertical Fit

Within an organisation, the first dimension in which elements need to be aligned is the vertical, which concerns the fit with strategy elements of the organisation (Altunay et al., 2021; Wadström, 2019). The basic statements through which companies formulate and communicate their strategies are mission, values, vision, and a competitive game plan (Collis & Rukstad, 2008). The authors explain that the mission statement addresses the organisation's purpose, while the values describe what the organisation believes in and how they aim to behave. Collis and Rukstad (2008) further explain the vision statement as the strive of the organisation and the competitive game plan as a set of activities through which the organisation aims to stay competitive, which can consist of, for instance, goals, business scope and advantage over rivals. Kathuria et al. (2007) state that vertical fit is by far the most elaborated dimension of strategic fit and that it is established when elements at a lower hierarchical level are consistent with the upper-level strategies of the organisation. Altunay et al. (2021) further state that a high degree of vertical fit for a solar model is when it is compatible with, or even contributes the fulfilment of, the corporate-level strategies. This implies that a high degree of vertical fit of a new element is achieved when it is coherent with the organisation's strategy elements and thus contributes to the fulfilment of the organisation's mission, values, vision and competitive game plan. Altunay et al. (2021) further identified the vertical dimension of strategic fit, together with the external, to be needed for, in their case, electricity retailers to even consider adopting a new solar business model.

Horizontal Fit

The second dimension to consider in the strive to reach strategic fit between a new element and the existing parts of an organisation is horizontal, which refers to the coordination of strategic elements between organisational units and functions (Wadström, 2019). Porter (1996) stresses the importance of the horizontal fit stretching over numerous organisation activities and not just one or two, which implies that the horizontal fit of a new element needs to be assessed based on several parameters. This claim is supported by Kathuria et al. (2007) who stress that the horizontal fit is rather unexplored in comparison to the vertical, as is has mostly been assessed based on two or three parameters' horizontal fit to each other. One way to conceptualise the organisation, and find such parameters, is the resource-based view, which emerged during the 1990s (Grant, 2021). The resource-based view conceptualises the organisation as a collection of resources that, in turn, create organisational capabilities (Barney, 1991). Resources are the productive assets of the organisation and can be divided into tangible and intangible resources (Jancenelle, 2021). The author describes tangible resources to be financial resources and physical assets while the intangible refers to non-physical assets such as reputation, organisational

culture, and human resources. Jancenelle (2021) describes capabilities as what the organisation can do based on such resources. The importance of organisational culture when leveraging resources is emphasised by Barney (1991) who states that if a firm acquires new resources, but have an organisational culture that lacks support in the exploitation of these resources, it might struggle to build new capabilities. Altunay et al. (2021) assess a new solar model to achieve a high horizontal fit when it utilises existing resources, builds on the same activities, and/or implies financial aspects with no major consequences for the established business model. This, in combination with the resource-based view of the organisation, implies that horizontal fit between a new element and the organisation can be achieved when the new element enhances, or at least does not compromise, the existing, and for the context, important resources and capabilities of the organisation. However, in Altunay et al.'s (2021) assessment of the strategic fit of new solar business models to electricity utilities existing models, they concluded that the horizontal fit where synergies between the new and the old business does not seem to be the main driver for adoption.

2.2.2. External Fit

In the strategic management literature, external, or environmental, fit is described as being the fit between the elements of an organisation and their environment (Venkatraman & Camillus, 1984; Wadström, 2019). Further, Scott (2003) stresses the importance of being able to assess the organisational environment's relative features and not only treat it as *everything which is not the organisation*. When aiming to introduce a new element into an organisation it is thus important to assess its external fit to the features of the organisation's environment.

The external environment can further be divided into a *material-resource environment* and an *institutional environment* (Altunay et al., 2021; Scott, 2003). Scott (2003) describes the material-resource environment to be the part of the organisation's environment related to its value creation process and can be reduced to a few major groups of actors affecting the organisation, including customers, suppliers, and competitors (Scott, 2003). The institutional environment comprises general socio-political rules as well as industry-specific expectations and norms (Scott, 2003) which the organisation need to comply with. This dimension was for long overlooked in the study of organisations and emerged during the late decades of the 20th century when analysts gradually started to realise that organisations are not only technical systems, but also heavily shaped by legal and political frameworks. For instance, Burger and Luke (2017) showed that regulations and subsidies targeting specific technologies strongly influence the decisions of organisations in regard to which solar power solution they choose. Further, the relationship between an organisation and its environment is two-directional; the external environment might have a substantial impact on an organisation, but the organisation might also have an impact on its environment, which can act as an incentive for an organisation to act, or not act, in a certain way (Chorn, 1991; Scott, 2003).

Altunay et al. (2021) state that a high degree of external fit of a solar model is when it is compatible with, or even facilitates the company responding to, incentives and pressures in its material-resource and institutional environment. This suggests that the external fit of a new element can be evaluated based on how well it facilitates compliance with external pressures. A new element with a high degree of external fit helps the organisation navigate their environment and may even enable the organisation to positively impact it. Further, Altunay et al. (2021) identified the external dimension of strategic fit, together with the vertical, to be needed for, in their case, electricity retailers to consider adopting a new solar business model.

3. Methodology

The chosen approach for this thesis was qualitative, which can be useful when important variables are unknown (Creswell, 2014). Bell et al. (2022) state that qualitative research usually emphasises words rather than numbers and starts from generally formulated research questions. As evaluations of solar power solutions for NEP companies is a relatively unexplored area in academia, the qualitative approach is suitable.

3.1. Research Strategy

The chosen approach and reasoning for the research process was abductive. According to Bell et al. (2022), the abductive process allow researchers to be surprised by the data and build theories about the world rather than using the data to confirm pre-understandings. Research strategies should, however, be considered as tendencies rather than clear classifications of research (Bell et al., 2022), and since solar power solutions for NEP companies is a relatively unexplored area in academia, the research has a more inductive than deductive tendency, aiming at developing theory rather than testing hypotheses. However, a common criticism of an inductive strategy is the difficulty of building valid theories, no matter the amount of empirical data (Bell et al., 2022). By using an abductive strategy in this thesis, the researchers aimed to select the most well-suited explanation from different explorations and interpretations of the empirical data, as mentioned by Bell et al. (2022). Shepherd and Suddaby (2017) state that using an iterative cycle between literature and empirical evidence facilitates the development of theories throughout the study. This approach was used to review new literature as new insights were acquired.

3.2. Research Design

To collect and analyse data, a proper research design must be chosen (Bell et al., 2022). In this thesis, a single-case study approach has been chosen.

3.2.1. Single-Case Study

Historically, case studies have been considered to lack scientific credibility, as they, in combination with being hard to conduct as they are based on a ‘soft’ research strategy, are too situation-specific and hence provide little basis for generalisation (Dubois & Gadde, 2002). In recent years, however, the interplay between theory and observations has shown to be a critical factor in developing theories, and hence case studies have gotten more recognition because of their contribution to high scientific value, especially when undertaking an abductive research strategy (Dubois & Gadde, 2002). As the research object in this thesis is a company with a bounded system, a clear purpose, and functioning parts, it fits well with the description by Bell et al. (2022) of when to use a case study. According to Bell et al.

(2022), case studies are widely used in business research and the basic case study has the characteristics of entailing a comprehensive analysis of a single case.

Eisenhardt and Graebner (2007) further dispute the assumption that sampled cases need to be representative and generalisable to a population by emphasising that the purpose is to develop theory and not to test it. The authors also state that single-case studies, as is the chosen approach for this thesis, may facilitate the creation of even more complicated theories than multiple-case studies do, since researchers then can develop and fit their theory to more details of the studied case. In agreement with Eisenhardt and Graebner (2007), Dubois and Gadde (2002) argue that a single case study can be superior to multiple case studies, as it, in opposition to multiple case studies, cannot be subject to relying on statistical significance.

Dubois and Gadde (2002) argue that the idea of a linear research process with distinct phases does not reflect the advantages of case research, but that the research process should be iterative. In line with how Dubois and Gadde (2002) describe it, this iterative approach will be undertaken in this thesis, where the researcher will constantly go back and forth between observations, activities, and theory. To demonstrate the credibility of the thesis and the new contribution to knowledge that it is making, the researchers will link research questions, results and discussions to existing research within the area, as mentioned by Bell et al. (2022).

3.2.2. Case Company

The chosen case company for this thesis was Liseberg AB, which is located in Gothenburg, the second-largest city in Sweden. Liseberg is owned by the city of Gothenburg and its core operations are within the physical borders of their amusement park, located in the city centre. The amusement park includes rides, restaurants, shopping, and entertainment (Liseberg, 2022a). In the near future, Liseberg will also expand south of the park through their Jubilee project, which includes a themed hotel and an indoor water park that will operate year-round. The water park, which will open in 2024, will have solar panels installed on its roof, leading to some in-house electricity production.

Considering that Liseberg consume a lot of electricity and at the same time put emphasis on their sustainability work makes them an interesting case company for this study of solar power solutions for NEP companies. They have recently reformulated their electricity supply strategy where two of the goals are to: (1) Use as sustainable electricity as possible and (2) Spread risks both in terms of supply and finances, which further motivates the choice of using Liseberg as the case company. Moreover, one of the researchers is and has been working at Liseberg for the last seven years, which will enable both a good understanding of the company and their values, but also enhanced abilities to reach out to important people by taking advantage of the network built-up during the employment.

Liseberg have ambitious sustainability goals and aims to be world-leading in sustainable park operations by 2025 (Liseberg, 2022b). One of five formulated sustainability issues is referred to as "Resource and Climate Efficiency" and encompasses two subsidiary objectives: (1) To calculate and reduce the environmental impact and (2) To strengthen energy supply and energy efficiency (Liseberg, n.d.). These objectives reflect Liseberg's commitment to adopting a more sustainable electricity supply strategy. However, as these objectives are relatively recent considerations, the path towards their attainment is not immediately clear. Today, Liseberg are in a situation where they have secured their electricity supply until 2024, by a fixed price contract including Guarantees of Origin (GOs) from wind power with an electricity retailer. The future, after the expiration of Liseberg's contract, is permeated by uncertainty regarding long-term supply. Moreover, with increasing volatility in the electricity market, the uncertainty regarding if fixed-price contracts will continue to be offered by electricity suppliers is high. Hence, Liseberg is looking to explore options for securing access to renewable electricity and they have been approached by actors who want them to become co-owners of solar parks. However, no decision has been made yet since they struggle to decide which option would be best.

Previously made investigations of Liseberg's electricity supply strategy have shown that solar PV is one of the main areas of interest apart from GOs contracts. One reason that solar PVs are assessed to have a high potential for Liseberg is the amusement park operation's high demand for electricity during summer and peak sunlight. Hence, the power peaks of Liseberg do not match the ones of the overall society, where the highest demand for electricity is during cold days, especially in the winter. This logic could argue for a good fit for using solar PV to accommodate the electricity demand at Liseberg as well as contributing to lowering the societal, overall power peaks. However, an in-depth identification and comparison of different alternatives for solar power solutions have not been made.

3.3. Data Collection

To prepare for the single-case study and gain knowledge about the available solar power solutions in the context of the case company, the report *National Survey Report of PV Power Applications in Sweden 2021* (IEA PVPS, 2021) was used to discover the major trends regarding solar PV application in Sweden. The websites of the Swedish Tax Agency and the Swedish Parliament were used to find current tax deductions, regulations and support schemes for solar power investments. Further, the Swedish industry association for solar power *Svensk Solenergi*'s list of member firms were used as a base to collect data regarding which solutions solar firms and electricity utilities offer to NEP companies. To search for the solutions that require physical delivery and installation of panels, host-owned and leasing, the filters "Västra Götaland", "project developer, e.g. solar parks", "technical consulting companies" and "installation companies" were used to find solar firms that are active in the area where the case

company is operating. The other solar power solutions, shared solar, PPA and GOs contracts, were searched for by filtering the list by “electricity trading companies” and no location filter since these solutions do not require physical proximity. However, Sweden was used as the limit of all searches, due to, for instance, regulatory and cost reasons. As few firms offering the shared solar solution were found in the list, additional searching for such solutions in Sweden was made in Google’s search engine by using the search phrase “co-owned solar park Sweden” and “shared solar park Sweden”. The websites of the found solar firms were searched through to determine which solutions they offer to NEP companies, the full list of the 82 solar firms that offered solutions to NEP companies can be seen in Appendix A.

For the single-case study, primary data was collected through semi-structured interviews with employees at Liseberg to gain understanding about the internal and external environment of the company. The interviewees had different roles and responsibilities in the organisation but the common denominator was that they all would be affected in some way by a potential investment in solar. A snowball sampling was used, meaning that all interviewees were asked if they could name another person that they thought could be affected by or potentially affect the decision to invest in solar power. This led to interviews with 10 people whose titles, responsibilities, and the theme of interviews can be seen in Table 1. A full interview guide can be seen in Appendix B.

Table 1 - interviewees and their role at Liseberg

Interviewee	Professional title	Theme of the interview
A	Head of Purchasing and Sustainbility	The company’s purchasing and sustainability strategy and the balance between profitability and sustainability. The challenge that the company face when it comes to electricity supply.
B	Environment specialist	The company's sustainability strategy and the most important sustainability issues. What role solar power could play in that strategy, and what the benefits and challenges are related to solar.
C	Sustainability manager	
D	Head of PR and Communications	The company's PR and communcation strategy and what role the sustainability work and a potential investment in solar would play for communcations.
E	Operations manager, campsites	The strategy of the campsite, as well as a discussion of the land and roofs that the campsite has.
F	Head of Technology and Security	The resources and capabilities of the technical function as well as the previous discussions about solar.
G	Property manager	The resources and capabilities of the technical function, the condition of the company's property and electricity infrastructure.

H	CEO	The company's strategy and corporate governance as well as trends and challenges in the industry. General discussion about sustainability and solar power.
I	CPO	The company's expansion and development strategy and the solar panels that will be installed on the water park.
J	Head of Development Seasons and Events	The company's concepts and aestetics and how solar power would affect that.

The interviews provided information about Liseberg's strategy, resources and capabilities, and external environment. Observations about the organisational culture were made through the researchers attending two meetings with the steering committee for sustainability as well as two weekly meetings for the purchasing & sustainability function. Further, more than half of the researchers' time has been spent at the headquarters of the case company, both to observe the culture and to have easy access to information when needed. Secondary data in the form of internal documents from Liseberg, steering documents from the City of Gothenburg and Liseberg's annual and sustainability reports were used to complement interview data to describe Liseberg's internal and external environment. All information about the internal and external environment of Liseberg was categorised into three parts that corresponds to the three dimensions of strategic fit. The first part was Liseberg's strategy, corresponding to the vertical fit, and it was further divided into strategic framework, vision of being world-leading in sustainable park operations, and electricity supply strategy. The second part was Liseberg's resources and capabilities, corresponding to the horizontal fit. The resources were futher divided into tangible and intangible and the capabilities into skills and organisational culture and processes. The last part was Liseberg's external environment, corresponding to external fit. The external environment was divided into material-resource environment and institutional environment.

3.4. Data Analysis

The solar power solutions that were encountered in the case company's context were analysed and compared with the solutions described in literature. Some corresponded well to the description in literature, while others were not mentioned in the literature. Moreover, some that were mentioned were not available in reality.

The analysis of the solutions' strategic fit to the case company was made solution by solution. First, the vertical fit was assessed based on whether the solar power solution is compatible with, or contributes to, the case company's strategic framework, sustainability vision, and electricity supply strategy. If the solution is assessed to contribute to those, the vertical fit is assessed to be high, and if it is assessed to counteract them, it is assessed to be low. If it does not indicate any couteraction or contribution, the fit

is assessed to be medium. Further, the horizontal fit was assessed based on the consistency of the new element with existing resources and capabilities. If the solution is assessed to utilise exisiting resources and capabilities in a way that the current operations are enhanced, the horizontal fit is assessed to be high. If the solution does not affect the exisiting resources and capabilities, the horizontal fit is assessed to be medium, and if the solution utilise exisiting resources and capabilities in a way that the current operations are compromised, the horizontal fit is assessed to be low. The external fit was assessed based on whether the solution is compatible with and can help the company respond to pressures from the external environment (Altunay et al., 2021), i.e. the material-resource—and institutional environment. A high degree of external fit means that the solar power solution can help the company respond to pressures and expectations in their environment, a medium degree implies that it will not facilitiate responding at all, while a low degree of external fit implies that the solution makes it harder for the company to respond.

In all three dimensions, a points grading system was used to assess the strategic fit, where a high degree of fit corresponds to +1, a medium degree 0, and a low degree of fit -1. After the strategic fit was assessed solution by solution, a comparison of the different solutions and their strategic fit was made to explicitly highlight the differences between them.

3.5. Generalisability and Limitations

The thesis aimed at understanding which solar power solutions that exist in the case company's context, and to assess their strategic fit to the case company. The findings herein may be applicable to other settings, considering that the green transition will imply a more volatile electricity market, that NEP companies need to contribute to it, and that electricity supply might get a higher degree of importance in strategic considerations. The case company of this study had characteristics such as being a large company consuming a lot of electricity with no previous knowledge of electricity generation, making the study potentially generalisable to other companies with similar needs. However, as both the characteristics of NEP companies and their surroundings can vary quite extensively, caution should be exercised when generalising the findings to others as, for example, company-specific characteristics can affect the way in which the result turns out.

Despite the valuable insights obtained from this thesis, several limitations of the methodology and the results should be acknowledged. First, this study was limited to the Swedish context, implying that its results may not be applicatble to other geographical areas, and that the methodology used to lead to those results may need to be adapted if carried through elsewhere. Second, the scanning of the solar firms offerings only focused on identifying the solutions that exist, and not how commonly offered they are, which could imply that some are harder to incorporate than others. Last, no financial comparisons

of the different alternatives have been undertaken in this thesis, which might limit which alternatvies that are feasible in practice as, for example, the return on investment could be crucial in decision-making.

3.6. Ethical Considerations

Bell et al. (2022) stress the importance of addressing ethical considerations and the treatment of involved research participants when conducting research. In this thesis, careful protection of participants' personal information has been undertaken by always excluding personal information unless permission was given by the specific participant. Further, to avoid publishing any misleading information or inaccuracies from the interviews, all interviewees have got the opportunity to read and approve the report prior to publication. By informing interviewees about the intended process and its steps, it was hoped that their openness and willingness to share information increased, and hence favoured the result of the research.

During participant observations, which were made primarily through attending business meetings, the researchers' intent of being present was clearly explained, i.e. that no individual behaviour was observed, but rather interactions and dynamics between the employees. Another ethical consideration that was taken into account is the fact that one of the researchers is employed by the case company, however, in another part of the organisation. This could imply that the employed researcher has additional knowledge about the business. To make sure that information in the report was presented in a way which makes it comprehensible to non-employees, all information was cross-checked with the not-employed researcher.

4. Results

4.1. Available Solar Power Solutions in Sweden

The results show that there are primarily four types of solar power solutions available for NEP companies in Sweden that want to incorporate solar power as part of their electricity supply: host-owned, PPA, shared solar and GOs contracts. In this section, these four are presented with their main benefits and drawbacks, followed by a review of an additional solution found from the market analysis, a solar park solution, and a solution mentioned in the literature not available in Sweden - the leasing solution. The distribution of how many solar firms offer each solution can be seen in Figure 1 at the end of this section.

4.1.1. Host-Owned Solution

33 per cent of the grid-connected solar power in Sweden is installed on commercial buildings. That distribution is mirrored by the solutions that are offered by solar firms to NEP companies – among the studied firms, the majority offered some kind of service or solution for roof-mounted solar PV systems. The studied solar firms state different lifespans of their offered solar PV systems, ranging between 30 and 40 years, and one firm especially emphasises the importance of the roof lasting this entire time period, implying that the installed system can be difficult to move. The same firm state on their website that the approximate time needed from project initiation until the solar PV system is mounted and operating is four to 12 months and that the estimated payback period of the investment after installation is eight to 12 years with today's electricity market price. Several firms state on their website that solar PV systems are almost maintenance-free. However, many firms offer service agreements for the ongoing maintenance activities that are to be performed once the solar panels are installed and operating.

The results show that since 2021, there is no investment subsidies or financial support schemes for solar PV in Sweden, which implies that the NEP company need to pay the full upfront cost of the system. However, there is a tax deduction available for NEP companies in Sweden that sell their excess solar power back to the grid. The deduction is 0,60 SEK/kWh and the maximum amount that can be deducted for is 30 000 kWh. Another requirement is that the electricity that is fed onto the grid can not exceed the amount that the same NEP company withdraw from the grid. When NEP companies are producing solar power in Sweden they can apply for electricity certificates. The certificates are free and are issued by the Swedish Energy Agency for every MWh that is produced, regardless of if the solar power is used by the NEP company in question or fed onto the grid. The certificates can be sold and could be an additional way to recover investment costs.

4.1.2. Power Purchase Agreement Solution

PPA solutions were presented on most websites as having their strongest benefits in the predetermined and contracted price, offering predictability without a need for the NEP company to make any upfront investments. The PPA solution was offered by some of the studied solar firms. Both onsite, where the NEP company provides land or roof surface, and offsite solutions, involving the purchasing of electricity, are mentioned. Some mentioned benefits from a PPA are that the low marginal cost of electricity protects the NEP company from volatile prices on the electricity market, that all financial and operational risks are taken by the solar firm, and that every PPA contributes to more solar power being added to the grid since solar parks are built to match the demand.

The drawbacks are seldom brought up, but one solar firm brings up the long-term commitment as both a benefit, referring to predictable liquidity, and a drawback, referring to the lengthy commitment. The regular procedure a NEP company needs to undertake when wanting to engage in a PPA solution is to contact the solar firm, which matches the demand of the NEP company with an upcoming solar park. Thereafter, the solar firm develops and builds the park, and then the NEP company can accommodate the electricity.

4.1.3. Shared Solar Solution

Several solar firms in Sweden offer co-ownership of solar parks or solar subscriptions, but how the solution works differs between different solar parks. By these firms, this solution is stressed as beneficial as the shares owned by companies can be resold and purchased later on, offering a great flexibility to NEP companies. For example, one park is operated by NEP companies purchasing solar panels that get mounted in the solar park and get compensated according to the amount of which they have invested. The solar panels can be in the park for 25 years and the solar firm is responsible for maintenance. The panels can be moved from the solar park at any time if the NEP company decides to since they are the owner. Other solutions are operated as economic associations where interested actors can register their interest in becoming co-owner in a planned solar park. Lastly, the shared solar solution is also described by two solar firms as a solar subscription. In both the share solution and subscription solutions the NEP company is compensated on a yearly basis based on the previous year's electricity spot price. In all solutions, the solar firm or association performs all activities related to the solar PV system. The solutions offer flexibility as a solar subscription can be cancelled and some firms offer "vintage shares", implying that NEP companies can resell their shares if they need to.

4.1.4. Guarantees of Origin Contract Solution

In Sweden, a law concerning GOs and electricity certificates came into force in 2003, acting as a facilitator to promote renewable electricity. Some of the solar firms offer solar power to NEP companies by allowing them to purchase Guarantees of Origin (GOs). The solution is most often presented as an add-on to a regular electricity contract and is thus offered mainly by electricity suppliers. When checking their websites, it was also found that fixed-price contracts are not offered to heavy electricity-consuming NEP companies at the moment. Instead, portfolio management is the best way for NEP companies to hedge against future price volatility in their contract and GOs can thus be added to such contracts or a regular one.

One solar firm, however, stated on their website that they purchase GOs for all the electricity their customers purchase, meaning that all customers indirectly buy GOs on their regular contracts. Further, to increase the demand for GOs and create a more well-functioning market, the Swedish Parliament decided in 2017 to increase the share of the electricity that solar firms sell, which is required to come from GOs. The intent of this measure is to increase the demand for GOs and hence the incentives to invest in renewable electricity production.

4.1.5. Additional Solutions

The leasing solution seems to be a common solution offered to households, but rare in solar firms' communication towards NEP companies. The website of two solar firms slightly indicated that they could potentially offer some kind of leasing solution to NEP companies as well. When contacting the two solar firms via email, one answered that their leasing solution for NEP companies is an instalment of the total cost with residual value in collaboration with a bank and the other simply answered that they only offer the solution to households and not NEP companies.

Last, several solar firms offer to construct and operate entire solar parks. Most of them are looking for landowners that want to lease out their land to the solar firm. However, one firm specifically offers NEP companies to invest in a solar park while the solar firm lease suitable land, and installs and operates the park. However, it is not stated if and how the investing NEP company can access the produced solar power. As of today, only eight per cent of the solar power capacity in Sweden is installed in ground-mounted and centralised solar parks. However, it is predicted that the number and size of solar parks will increase. This prediction is strengthened by the number of solar firms that search for available land to lease.

To conclude the results about different solar power solutions, the host-owned solution, PPA, shared solar, guarantees of origin and solar parks are all offered in the context of the case company. The leasing solution, on the other hand, does not seem to be available.

4.2. Liseberg's Strategy

Strategic Framework

Liseberg's strategic framework was reformulated in 2022 and can be seen in Figure 1. In this recent version, sustainability has a more integrated role and Liseberg's business model changed significantly with the addition of a new thematised hotel and water park to the existing amusement park and campsites. The strategic framework is based on a mission, vision, business idea, six strategies, and a goal. The **mission** is that Liseberg exist for people to be able to experience joy together. This was emphasised by interviewee D, who stated:

> *"The experience we should deliver, regardless of whether we are discussing solar PV, an investment in a hotel, a new roller coaster or what we say to a guest ordering three cotton candy, the feeling should be joy together"*

Figure 1 - recreated from Liseberg's strategic framework

Liseberg's **vision** is to be "the most beloved amusement experience". The **business idea** is described as the aim of the business and is stated as "Liseberg offers Gothenburg locals and visitors high-quality entertainment experiences - all year round". The six **strategies**; destination development, digital transformation, the workplace of the future, sustainable development, brand development, and

innovation & investments, are used to reach the **goal** of the organisation: long-term financial sustainability. The goal of long-term financial sustainability is, according to several interviewees, to create a healthy financial state to be able to reinvest in the business. What seems to be a common saying within the organisation, which both interviewees H and J quoted in unison, is:

"We do not operate Liseberg to earn money, we earn money so that we can operate Liseberg"

Vision of Being World-Leading in Sustainable Park Operations

In several interviews and in Liseberg's sustainability directives, **an additional vision**, the vision of being world-leading in sustainable park operations is mentioned. That vision has been used as a base to formulate several sustainability goals and focus areas. When it comes to sustainability, Liseberg want to do things in addition to what the legislation tells them to do and inspire industry colleagues to follow. Sustainability is a strategic aspect for Liseberg and sustainable purchasing is an essential tool to become world-leading within sustainability in the industry. However, it is stated that sustainability sometimes needs to be deprioritised because it is too expensive and that there is always a trade-off between that and other investments. However, the CEO believes that Liseberg, in the future, will need to invest more than what has been done historically in areas that support their core business and that one of those is sustainability. Although these investments do not directly create value in the same way as, for instance, a new roller coaster, they will make Liseberg stay relevant as an employer and as a brand.

Electricity Supply Strategy

One focus area of the sustainability vision is electricity supply and electricity efficiency. The Head of Purchasing and Sustainability suggests that Liseberg have not thought strategically about electricity before and today they supply all electricity through a fixed-price contract from one electricity supplier, with 100 per cent GOs from wind power. The contract expires in 2024 and they have recently formulated an **electricity supply strategy** that will be used to secure future electricity supply. The strategy is formulated as increase efficiency to decrease electricity use, **spread risks** both financially and to ensure availability of electricity, and use as **sustainable electricity** as possible. The efficiency part of the strategy has fallen on Liseberg's technical function which aims to decrease electricity use by reinvesting in existing facilities and by being involved in new building projects. The risk spreading and sustainability part, however, is to be achieved through adding sustainability requirements in the procurement process and dividing the amount of electricity needed between different contracts with different expiry times. It is also mentioned in interviews that it is important that Liseberg **contributes to more electricity being added to the grid**.

When discussing the amount of solar power needed, wanted or required for Liseberg to be willing to make an investment, the answers from different interviewees spanned from "everything matters" to that

it would be favourable to invest on a large scale to make a bigger impact. It is also discussed that installing solar panels could potentially have a communicative value towards Liseberg's guests. However, the Head of PR & Communications suggests that Liseberg are often reluctant to talk about their sustainability work, much because of the fear of getting a "greenwashing" reputation. Lastly, the CEO expressed that yes, visible solar panels in the amusement park would be good and serve the purpose of, for instance, communication, but that more solar panels than what can be installed on the rooftops inside the amusement park will be needed in the future.

4.3. Liseberg's Resources and Capabilities

An organisation have both resources and capabilities that, when combined horizontally can facilitate the fulfilment of the strategy and imply a high degree of horizontal strategic fit. In the following sections, Liseberg's resources and capabilities in relation to their electricity supply according to the interviewees are presented.

4.3.1. Resources

Tangible Resources

First, the results show that Liseberg consider themselves to have relatively strong financial resources. Moreover, the roof surface, inside the amusement park or at the campsites, that could potentially accommodate solar panels is not negligible, but neither extensive. As the park is under constant reconstruction to make it attractive to guests to visit more often, some of the roofs' lifespan is very uncertain. When discussing installing solar panels on roofs within the amusement park, interviewee G said:

> *"Disadvantages is the changing park we operate in. Precisely, we invest and then rebuild that particular building and structure before the investment has been paid off. It is something we do quite often actually. Even though the investments are not depreciated and finished, we make a reinvestment again. For that reason, it is a financial risk to make an investment in solar panels on buildings that may find another use before the investment has been paid off."*

Moreover, the entire park is built around the illusion of entering a "fantasy world" and it is stressed in some interviews that solar panels on roofs inside the park could potentially compromise the aesthetics. The infrastructure that Liseberg have today allow them to buy electricity through a high-voltage line and the electricity is later converted to low-voltage in transformation stations within the amusement park. This infrastructure does not allow potential, excess solar power produced inside the park to be fed back onto and sold to the grid.

Liseberg have done related investments before that can be classified as tangible resources. At one of the two campsites, a solar PV system is installed on the roof of the service building. However, these solar panels are not working although they are still mounted on the roof, and it is unclear when they were installed or when or why they stopped producing electricity. Moreover, Liseberg invested in a wind turbine in 2009, located in the countryside south of Gothenburg, which in 2020 produced electricity corresponding to approximately 5 per cent of the amusement park's annual consumption. The investment decision for the wind turbine was according to the interviews, most likely based mostly on gut feeling at the time. The only involvement Liseberg have with this wind turbine is financial, and hence all maintenance and operational activities are outsourced. As for the new water park opening in 2024, it has been decided to invest in 2000 square metres of solar panels on its roof, which will contribute to approximately 10 per cent of its electricity consumption, which is accounted to be around 18GWh annually, approximately the same annual consumption as the amusement park. As the system covers a relatively low percentage of the total consumption, the system is not dimensioned for feeding any excess capacity onto the electricity grid as all produced electricity will be used. The solar PV system on the water park will be owned by Liseberg, but installed by the contractor building the water park. It is mentioned that no extensive investigation was made to evaluate roof-mounted solar panels prior to the decision. Hence, this decision was, similar to the one regarding the wind turbine investment, made mostly based on gut feeling.

Intangible Resources

Liseberg have a technical department which are very broad in their knowledge and competencies. However, they do not have specialist competence regarding operating, installing, or maintaining a solar PV system. As the business is in an expansive phase, acquiring these competencies in the near future would be challenging. Moreover, doubts about being too broad competence-wise have been expressed and having the competence to operate a solar PV system in-house might divide the business and take away the focus from the core offering, and encompass the risk of being unnecessarily costly. However, it is stated in the interviews that the solar PV system that will be installed on the water park will, most likely, be maintained in-house but no plan regarding how this should be handled has been made. Interviewee F stated when discussing installing solar panels in the amusement park:

> *"Someone needs to take care of and maintain them [the solar panels]. I am in favour of finding some type of large-scale alternative and contributing in a greater perspective. I think that someone else can do it better than my department undertaking the operation, maintenance and management of this type of system. We have a lot of knowledge, but we are not specialists in solar PV technology, converters and systems to feed electricity to the*

grid. There are others that are better at those things, and it would take my team and me away from the core business, which we want to be best at"

Liseberg is considered one of Sweden's 10 strongest brands. With a strong brand comes constant coverage, both by the media and the public. That visibility is both valuable but also challenging.

4.3.2. Capabilities

Skills

Several interviewees stressed that Liseberg is a company which is very broad competence-wise and that the ability to coordinate all the work done within the organisation is good. They express themselves as having high abilities in maintaining the content of the amusement park and developing its concepts, meaning that their broad base of competence builds to high capabilities of taking care of and developing the amusement park, for example ensuring safety in rides, looked-after gardens, development of new concepts, and working sound systems. Building an experience that makes guests want to return to Liseberg is of high importance and is worked with through a systematic approach where age segments in a rota system determine what to invest in next.

The, in Liseberg's opinion important, capability of communicating messages of what the company achieves and strives towards in different areas to their stakeholders was discussed during the interviews. Liseberg have several stakeholders, and communicating different parts of the company's activities to them is assessed as being very important for any company, but especially for Liseberg as it is municipally owned. Thereby, it is important to build a high degree of trust and alliances with actors that are not guests or employees, but rather politicians and municipal inhabitants. As Liseberg is owned by the City of Gothenburg, it is important to inform the inhabitants about, for instance, risks taken or good results, in a way so that they stay supportive even in bad times. Historically, Liseberg have barely worked with this and the journey of building up the trust has started. Interviewee D expressed this as:

"It is important that we have trust capital to tear on"

Organisational Culture and Processes

According to the CEO, Liseberg has evolved both as a company and a product during the last decade, where both the culture and the organisation have changed. The philosophy is that the closer to the customers the decisions are made, the greater the chance that the decisions are right. This has created an organisational culture where the different functions work independently and are able to make decisions that are related to their operations. It is mentioned that some transformations and decisions need more synergies between the different functions to be successful. For example, digital transformation needs to be done in the same way throughout the organisation. One observation that has

been made of this culture is that it can create difficulties in making decisions that are not really any function's main focus. Further, it is stated that the many internal stakeholders can create difficulties in **decision-making**, many people at different levels of the organisation want to have their say about the different matters related to the amusement park. Several interviewees said that installing solar panels in the amusement park would be problematic because of the aesthetics inside the park being so important. However, when a person responsible for the aesthetics was interviewed, it became clear that the question of solar panels had never come so far in the process that aesthetics had been discussed. The person simply expressed that:

> *"If it was decided that solar panels need to be installed in the amusement park, my team and I would of course handle it and include it in the planning".*

The decision-making has been organised into different steering committees, e.g. one for new projects and one for sustainability. However, the fact remains that it can be hard to make decisions about matters that are not any function or unit's main concern.

4.4. Liseberg's External Environment

The external environment of a company can be divided into a material-resource environment and an institutional environment. The material-resource environment is related to the value-creation process of the company and consists of customers, suppliers, and competitors. The institutional environment, however, refers to the general socio-political rules as well as industry-specific expectations and norms that the company needs to comply with, which in this case are the context of Sweden, national regulations, and municipality pressure.

4.4.1. Material-Resource Environment

The results show that the three major groups constituting the material-resource environment, customers, suppliers, and competitors, all have an impact on the direction in which Liseberg operate. Starting with the **customers**, they consist almost exclusively of private individuals and are referred to as guests by Liseberg. Liseberg state that the guests are an important group of stakeholders who have a high impact on where the focus of the business should be. Through thousands of customer surveys, personal contact, focus groups, and other communication methods, Liseberg collect information about what aspects of the business the guests value the most. One of the five aspects is how Liseberg work with climate impact, energy, disposable items, and waste disposal. In the sustainability report from 2021, the CEO express that the sustainability issue implying the greatest risk for the company is if they fail to keep up with the guests' changed expectations in relation to sustainability issues. Moreover, several

interviewees stressed the fact that guests become more and more aware of sustainability-related questions and want to see measures undertaken by Liseberg.

As for the **suppliers**, Liseberg assess their suppliers to have a strong influence on the operations of the business, why the company pay great attention to ensure that their suppliers act responsibly and that Liseberg uses reliable suppliers. Electricity has been a question of increasing importance over the last couple of years and increasing attention has been directed towards the strategic activities around it. For instance, interviewee A expressed:

> *"As of right now, we are putting all eggs in one basket. We have one contract with one single electricity supplier which expires in late 2024, but let us say that it would have expired this fall - then we would have been in a bad position. We need to spread risks, and reason like anyone would do with a stock portfolio. We have not taken a holistic approach about the electricity supply issue before although it is such an important product which have a relatively high spend. We need to do that. Because ultimately, the park will stop without electricity."*

Moreover, Liseberg stated in the annual report that they, during 2022, drew up an action plan for different scenarios resulting from an energy shortage. In summary, Liseberg assess their bargaining power in relation to electricity suppliers as being relatively low.

Liseberg choose to call their **competitors** their industry colleagues, and in comparison, they assess themselves as being at the forefront, where they want to inspire others to increase their sustainability work. However, Liseberg is not finished with their sustainability work, they still see challenges and opportunities to improve. However, industry colleagues put pressure in other ways than sustainability. One example of this is that the industry is moving towards more and more conglomerative settings. This creates, as interviewee A expressed it:

> *"Large corporations with larger financial muscles"*

4.4.2. Institutional Environment

As for the institutional environment surrounding Liseberg, it consists of a broad range of factors. However, a few specific elements were highlighted, more specifically the context of Sweden, national regulations, and municipality pressure.

As for the elements referred to as the **context of Sweden**, Liseberg is located in Sweden, which put it in a cultural position of being "required" to work more with sustainability issues than many of its