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Facilitating locations of green energy on land. What can make it successful?

- A case study of the Energy Park Veddam Kær

Karl Felix Flyvbjerg Poulsen

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Examiner: Anders Lund Hansen
Supervisor: Henrik Gutzon Larsen



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Photo: Own photo. Taken in the edge of village Veddum. Source: Own photo April 2023.

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Abstract

This paper investigates what can promote green energy projects on land which consist of solar and wind power. The research is done with an economic geographic framework of path-development. A paradigmatic case study is conducted with scientific semi-structured interviews and short “pop-up interviews” which validated the in-depth interviews. These pop-up interviews also highlight further points and nuances to the findings that is aimed to contribute to the knowledge to the field of what facilitates the location of green energy. In the context of green energy projects, it is found that actors and their approach to exercise their agency is vital to the success and/or failure of green energy projects. Both for individual actors and in groups it is important that agency is applied in respect to wishes and concerns between the different actors in question. Different actors have a significant importance during different phases of establishing green energy projects as path developments.

Foreword

"The man in the desert is sovereign, he's free to do whatever he wants, but he can do nothing because he's powerless" - Lord Heseltine, 2019

Regardless of whose name is written on the frontpage as the author of this thesis, the reality is that I was only the messenger of the findings of my research. I was free to write whatever I wanted in a human geographical context, but I would have been powerless to contribute with knowledge in the field of green energy on land or that would have been the case if it was not for cooperation, goodwill, trust, and helpfulness from the people who has contributed to make this thesis possible.

I would like to thank my supervisor Henrik Gutzon Larsen, who has encouraged me when I found the task insurmountable at the heaviest and hardest weeks of theory reading and enriching me with the experience of writing academically. Henrik Gutzon has also Given me examples on how I could approach structuring a thesis and at times needed patience in believing that I eventually will find a way forward to combine the theoretical framework and the analysis in a coherent way.

I would also like to thank the respondents in the in-depth interviews. Their contribution with invaluable knowledge that helps in understanding the process of what has made agencies exercised between actors in the case study facilitate the successfulness of locating a green energy project on land. I would like to thank the aforementioned for both lending me their time not only for interviews, but also the time spent preparing for them. Lastly, I would also like to thank the interviewees for a friendly and open conversation in their respective interviews.

I would like to thank my brother Magnus who has contributed with his superb English language skills. He has prevented many "Danification's" of English in this thesis.

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I also would like to thank my mother for letting me borrow her car so I could rush to Veddum on a day with optimal wind conditions for having the loudest possible noise in the village from the wind turbines and conducting interviews. Always enriching to look up and away from the books and face reality. She has also in the last week of writing been generous in making sure I got proper nutritious food by offering me a refugium to make the last corrections of the thesis, meanwhile fresh summer fruits and vegetables from the garden has been available to me. An effort much more valued than it may sound like.

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1. Introduction

Climate changes and energy supply problems. These are two cardinal issues catapulting the importance of a rapid green energy transformation on to the political agenda (IPCC, 2023); (Bump, 2022). Despite the importance of the green energy agenda, many green energy projects are not realized due to resistance from local residents, existing businesses and politicians in the local area (Simon, 2022); (Del Bene, 2018); (Smith, 2008) As an example, most people support more wind power but it meets resistance when a location is selected nearby their own household (Smith, 2008) This is a tendency taking place in all different parts of the world (Simon, 2022).

Occasionally, however, projects are realized without much resistance, and some of the realized projects even become popular in their vicinity. From a human geographical point of view, establishing green energy require space. People living and doing activities in places nearby these green energy sites will have an impact on the success and failure of these projects related to the place This thesis seeks to contribute knowledge on what makes these changes acceptable to different actors and thereby contribute to a green energy transformation. This will be pursued through a case study on the location of a green energy project, which seemingly is popular among residents, companies, and local politicians. This topic is important because green energy projects often are being resisted by residents in the areas where such projects are planned (Simon, 2022); (Smith, 2008). This same tendency is taking place in Denmark, a which is interesting to look at as it both faces climate change and some of the harder impacts from the geopolitical issues related to shortage of energy (IPCC, 2023); (Bump, 2022). Long before these severe problems escalated, Denmark was seen as a pioneer in the green energy transformation (Sæhl et al., 2023). It is one of the countries where the wind turbine was modified for electricity production, and wind power was from an early stage taken seriously by government and innovators. This has led to a large industry and in some parts of the country it has generated a significant number of jobs and trade (Vestergaard et al, 2004).

The tendency of resistance to green energy projects is a significant problem. For example, solar panel projects are presently at a halt due to resistance of the residents in Denmark (Simon, 2022); (Sæhl et al., 2023). and this is also seen more generally in Europe (Dalton & Collins, 2022). Further, not a single wind turbine is scheduled to be established on land in Denmark in the year 2023. Experts claim that this has a negative impact on climate change and energy supply issues, and it also creates problems because Denmark is seen as a role model by other countries (Sæhl et al., 2023).

However, there are also cases where renewable energy projects have met little local resistance. An example of this is found in Veddum, a village in Mariagerfjord municipality in the southeastern part of the North Jylland region in Denmark. The case is situated by Veddum. In Veddum, a green energy park of wind turbines and solar panels was established (Munksgaard, 2023), and people in Veddum are seemingly satisfied with the project. According to the communication manager of the company implementing the project, this is “exceptionally rare” (Munksgaard, 2023).

The localization of solar- and wind power projects on land is important for the renewable energy transition and energy supply security. Therefore, it is relevant to investigate successful case, such as the case of the Veddum project.

1.1 Research question:

Based on deliberations in the introduction, a research question for this thesis has been established:

What facilitates successful localization of solar energy and wind turbines on land?

2. Scientific Theoretical Framework:

This chapter functions as the scientific considerations and point of departure for the scientific work. A theoretical framework will be created with inspiration from path-dependence, an economic geography discipline. To be specifying a Scientific theoretical framework is important because the approaches and philosophies to understand the world exist in an insurmountable number. By establishing a clear theoretical framework, it is clarified which reflections knowledge is created upon. An actor-based path-dependence rather than a systemic one will be framed.

This chapter will not seek to outline a whole theoretical scientific overview of path-dependence but will instead extract meaningful concepts and elements from that discipline in connection to making this thesis answer the research question.

2.1 Path-dependence

Path-dependence is from a tradition of economic geography (Jolly, Grillitsch, & Hansen, 2020). It can be relevant working with path-dependence in human geographical thesis as the facet can show how geography can influence the development of society and its economics (Jolly, Grillitsch, & Hansen, 2020).

Path-dependency stems from a mindset reflection on decisions and past paths taken, that for example can shape the decisions on future areas, systems, industries, and institutions (Grillitsch, Hansen, Coenen, Miörner, & Moodysson, 2019). The influence of past decisions can create friction and resistance creating difficult conditions to develop new industries in an area. This can help explain why it is difficult to introduce new industries unrelated to the already existing ones in an area. Traditionally path-dependence has been criticized for being too rigid (Grillitsch, Hansen, Coenen, Miörner, & Moodysson, 2019). However there also exists the recognition in path development that the industrial path can develop. This is described as path-development or path addition. This concept signifies that Industries unrelated to existing industries in a specific area can be established, specifically in those areas seeking new ways of increasing economic activities as the existing industrial path can sustain a smaller population, contrary of what it used to. these areas are often rural

districts (Elekes, Boschma, & Lengyel, 2019). It highlights that human actors can change a path despite the systemic rigidity. This is something expected to fit the case of Veddum as it is a rural district.

In relation to answering the research question, Path-dependence can help understand how concepts such as location, climate, technological development, and resource access all play a role in shaping the decisions that culture the development of society. Path-dependence has also been used in the fields of history and studies of economics. They show the decisions and coincidences that remains influencing the development.

2.1.1 Path-dependence in connection to the research question

In a time where things are changing rapidly new developments and ways of thinking are emerging:

“(...)shocks can also constitute an opportunity for regional economies to renew their structures and functions and to move to a new trajectory that is superior to the pre-shock state.” (Jolly, Grillitsch, & Hansen, 2020, Page 882)

The “shocks” in this context is climate change and geopolitical reasons. For the purpose of limiting the negative effects of climate change and of geopolitical reasons, it has become more urgent as established in the introduction to have green energy production in place. It can create new thoughts and ideas relating to which path a local community or region should take.

Economic theories have investigated a lot the importance of already existing agencies to explain why, and how new agencies were established in an area (Boschma, 2017). A given industry could potentially have a spillover effect in establishing new agencies to the existing path in the area. The spillover effect can be created from a need for the already existing industry or because of specialization in the region. It can lead to new agencies when two already existing agencies combine their knowledge into something

new (Boschma, 2017). As preconditions for industrial paths are important to have in mind, it is not enough to answer this research question alone:

“The birth and development of new industries are often seen as occurring due to the presence of dense regional networks and structures, a combination of different knowledge bases, vibrant entrepreneurial culture, and innovative firms. However, despite this interest in preconditions and processes related to structural change, little is known about the microlevel processes that drive industrial restructuring. As argued by Boschma.” (Jolly, Grillitsch, & Hansen, 2020, Page 176) *inspired by* (Boschma, 2017).

Already existing industrial paths are defined as what constitute the existing industries that sustain jobs and economic activity in an area to maintain a livelihood for the people living in these areas (Jolly, Grillitsch, & Hansen, 2020). As described in the introduction the case Veddem will be specified in the industrial background section of the analysis and further on in the analytical part of this paper and how it relates to specific actors and agencies around Veddem.

Economic geography can contribute as a theoretical framework investigating the location of green energy beyond the path dependence:

“(…) there has been little theoretical and empirical work that connects the behavior of individual agents to institutional change and regional development. Having said this, there is a burgeoning interest in the role of agency in regional structural change both in the quantitative and qualitative traditions of economic geography. Recent quantitative papers make associations with the occurrence or appearance of certain types of firms and industrial diversification.” (Jolly, Grillitsch, & Hansen, 2020, Page 176).

2.2 Concepts

With inspiration from (Jolly, Grillitsch, & Hansen, 2020) the theoretical framework of this thesis is aimed to be constituted by path-addition a subcategory of path development which is a branch of the economical geographic theory named path dependence (Jolly, Grillitsch, & Hansen, 2020).

In path development and path dependencies, economic geography can help us understand the interaction between actors and how the industrial character of a region is constituted (Jolly, Grillitsch, & Hansen, 2020)

Further (Jolly, Grillitsch, & Hansen, 2020) will be an inspiration to what concepts in path-dependance will be used and how they are creating a frame on the reflection on what facilitate successfully locating green energy.

Below are the concepts decided to use for this thesis outlined.

2.2.1 Phases

For practically uncovering what aspects can facilitate successful location of green energy, the analysis of the thesis will be divided into three phases it is both worth considering the history/industrial path development which must be put in relation to the actors involved in the local area and in the energy park project and why they act as they do. To have a thorough understanding of the project it is necessary to have a position of the actors and a historical chronological happening of events to understand how what happened because of what reason (Jolly, Grillitsch, & Hansen, 2020). Therefore, based on findings in the research an appropriate number of phases will be selected to categorize the findings done in the analysis. The three phases will be elaborated on in the methodology chapter.

2.2.2 Actors

Human decision-making and certain groups or individuals are the key to success or failure (Grillitsch, Hansen, Coenen, Miörner, & Moodysson, 2019). Actors simply are the individuals that are getting things done. Regardless of how we define agencies, companies, industrial and economic activities, politicians, NGOs etc. In this thesis individuals mentioned having a role facilitating the success of locating green energy will be categorized in groups mentioned as actors.

it is important to have in mind the interactions on a human and personal level. However, "humans" is too broad a term to make a scientific analysis that can be

relevant outside this thesis. Therefore, it is beneficial to divide people into defined groups to make the scientific work more relatable to other studies and real-world cases (Jolly, Grillitsch, & Hansen, 2020).

The aim of the thesis is not to understand specific unique individuals' actions in facilitating green energy but instead to understand what human actions can facilitate it. If there are categorizations of these individuals so the knowledge becomes relatable and useful to the reader (Jolly, Grillitsch, & Hansen, 2020) who may be living in a different context with different individuals than the ones in this thesis.

The five categories of actors will be described below in the middle column based on (Jolly, Grillitsch, & Hansen, 2020). In the column to the right the actors are put into context of the thesis topic:

Actor:	Generalization of actor inspired by (Jolly, Grillitsch, & Hansen, 2020)	In thesis Context:
New Firm	The actor from the outside or from within the local community that wish to change the character of the industrial path that is characteristic of the region.	This can be an outside energy provider or a local group of people wishing to establish green energy parks in an area where they have not previously been agencies of that character in the industrial path of that area.
Incumbent firm	The existing industries and services that are constituting the economic activities and services of that area.	The agencies operating in an area, which have developed throughout history from private entrepreneurship and political decisions.
Facilitating actors	Can be scientific actors that help understand mechanisms of a local area, its residents, opportunities, and challenges. Economically, socially etc. It is also public non-elected officials that facilitate processes of development as an example.	Scientists that help understand what are the issues that can make green energy popular and unpopular. Public non-elected officials that can assist in a development process and assist the different actors in reaching an understanding of each other.
Policy actors	Politicians, political parties, NGOs and activists etc.	Politicians which can facilitate with favorable legal framework and development support. A

		type of actor that can create conditions for green energy agencies as well. It could as well also be NGOs or activists etc.
Fringe actors	Actors that are not in any official position or considered officially central in the path development of a region, but might have a social status or connecting in the area that makes them important in the process of path development	Could be a local resident representing and gathering the community. An actor having the ability and mandate to negotiate a good deal for everyone. In general, everyone who lives in the proximity to a proposed green energy agency that wish to affect the outcome of the project.

The scheme above gives a clear view of who what kind of actors and what they represent.

The actors represent not just a role to play in the process, they are also an expression of different parts in the process.

2.2.3 Agencies

Agencies are the what the different people categorized into different types of actors can do and want to do:

“The ability of people to act, usually regarded as emerging from consciously held intentions, and as resulting in observable effects in the human world” (Gregory et al., page 347).

The agencies are something that represents what different individuals as actors can do (Jolly, Grillitsch, & Hansen, 2020). In this context as what their actions can do in facilitating a successful location of green energy.

The agencies are divided with inspiration from (Jolly, Grillitsch, & Hansen, 2020) into four subcategories all used for categorizing the different aspects of agency the actors can exercise in the different phases (Jolly, Grillitsch, & Hansen, 2020).

2.2.3.1 Schumpeterian innovative entrepreneurship

Is the type of agency to establish new firms and types of businesses in innovative ways that are not necessarily within the already existing path and how innovative thinking

can develop and add to a path (Jolly, Grillitsch, & Hansen, 2020). This can lead to new industries unrelated to the ones already existing in the area prior to the industry in question.

2.2.3.2 Institutional entrepreneurship

Is the agency where actors can improve the legitimacy and conventionality of a firm and create what is necessary for changes to paths to something new:

“Institutional entrepreneurship, which involves challenging existing institutional norms, raise legitimacy, and institutionalize alternative practices and norms (Jolly, Grillitsch, & Hansen, 2020 page 178).

Institutional entrepreneurship is the agency where actors can affect a path into a new direction by adding value and new opportunities to the current existing path. In this thesis it will be analyzed what must be done to make green energy projects be accepted for a specific location.

2.2.3.3 Place-based leadership

Is a form of collective leadership to coordinate regional development efforts with a wide range of actors, extending from the individual private interests to the benefit of the region (Jolly, Grillitsch, & Hansen, 2020).

It will be analyzed how this agency can facilitate a successful location of green energy in order to answer the research question.

2.2.3.4 Structural maintenance

Structural maintenance is an agency important to the research as the already current path has many interests of different actors and therefore often is challenging for new paths, path-development, and path-additions. If a new firm is introduced and it collides with the interests of already existing incumbent firms, the newly introduced firm will be in a disadvantaged position as structural maintenance is:

“[t]he past thus sets the possibilities, while the present controls what possibility is to be explored.” Thus, agency is often strengthening existing structures and

specialisations due to a number of different lock-in mechanisms” (Jolly, Grillitsch, & Hansen, 2020) based on (Klitkou, Wessberg, Wessberg, & Hansen, 2015).

In this thesis this will be analyzed on, what eventual disadvantaged positions for green energy can be avoided to be successfully finding a location for green energy.

2.3 Operationalization of scientific theoretical framework

Looking into what is important in geographical areas and what makes a project on establishing green energy successful or not, it is as already described favorable to apply path development. This theory of economic geography can help us to understand which actors who exercise what kind of agencies in the process of finding a successful location for green energy. In the following section it will be outlined how the research is operationalized.

3. Methodology:

The methodology section outlines how the theoretical framework will be operationalized.

There are chosen to conduct a case study of Veddum and in so focus on the actors and what agencies they have exercised between them. Interviews will be conducted to have a deeper understanding of the exercised agencies in the process leading to a successful project of establishing green energy on land.

3.1 Case study:

In this section it will be highlighted, how a case study fits well to operationalize the theoretical background to understand what makes establishing green energy parks on land successful.

In our complex world, case studies identify real phenomenon in a real-world example context. In this is the opportunity for the geographer to examine a research question about a phenomenon to confirm and falsify what is important to understand about the given topic.

A case study can function as a research design. This can be used to understand a social phenomenon, particularly those which are conditioned by geography (Flyvbjerg, 1992, Page 142).

Case studies according to Flyvbjerg is an applied method for detailed research to highlight a chosen topic. In some cases, through a case study there can be contributed with knowledge about the topic with findings from the case study (Flyvbjerg, 2001).

Case studies become relevant in two ways when answering what can make green energy projects on land successfully. One is that case studies can highlight specific characters that has led to a specific wanted outcome for the studied topic (Flyvbjerg, 1992). In this thesis it is understood as agencies exercised by actors which have had positive impacts on successfully locating a green energy park in Veddum Kær. The other way case studies prove useful is that they also can falsify (Flyvbjerg, 2001). By

falsification it can be highlighted what is not contributing to a specific outcome or what is countering a desired outcome (Flyvbjerg, 2001). In this thesis it can be understood as agencies exercised that prove it more difficult to establish green energy in a place.

Falsification is valuable knowledge because future cases of finding locations to establish green energy can use that experience not to make the same mistakes as that has been done elsewhere in the past. A falsification is thereby also a way to contribute with knowledge to what makes finding a location of establishing green energy successful.

3.1.1 Paradigmatic case:

The chosen case is a paradigmatic case. According to Flyvbjerg the paradigmatic case is one that has the purpose of:

“Function as a metaphor for or form a school for the field which the case is related to” (Flyvbjerg, 2001, page 149).

It is argued the case area of Vedum Kær energy park is a paradigmatic case because there is a possibility of obtaining knowledge of general character about establishing green energy on land as a part of the green energy transition. Flyvbjerg emphasizes that knowledge and experiences from a paradigmatic case can be applied in a broader more general form in other cases within the same field (Flyvbjerg, 2001).

3.1.1.1 Selection of case

Consequently, by selecting Vedum Kær as case study, other potential cases have been deselected. In other places green energy has been established. Those deselected cases could potentially also contribute to the topic on successfulness in location of green energy on land. As an example, offshore wind turbines are deselected. Offshore is also an important form of energy, however it has its limits. It is a more expensive form of energy compared to wind on land (Timblin, 2022). Another factor is that the electric grid cannot sustain a shift towards electrification of society if energy in general is produced too far away from the consumer (Timblin, 2022). The other factor is it is a mixed energy project. Solar and wind power generate the most electricity in opposite

parts of the year and therefore to have a stable renewable energy supply it is preferred to have a mixed energy production (Zabir Mahmud et al., 2022).

Veddum Kær is selected as it seemingly is specifically successful where virtually no complaints have happened (Munksgaard, 2023). Veddum Kær energy park is selected as it is the largest green energy park on land of mixed energy in Denmark (Eurowind A/S, 2023) and at the same time is one of very few projects that seems to be popular among the local residents (Munksgaard, 2023). It is a project that is hoped to contribute with knowledge on how to successfully locate large scale green energy production.

3.1.1.2 The phases of the case study

With inspiration in the theoretical framework, the case study will be analyzed in three different phases. Prior to that an introduction to the case and a brief historical development will be outlined to put it into context what conditions the area has in which the case study divided into three phases takes place. In the analysis section of this thesis, the three different phases will be presented as three individual subsections. The three phases are selected based on thoughts on how to investigate different aspects of what facilitates a successful location of green energy. The three phases are divided chronologically into three different time periods in establishing energy park Veddum Kær.

The first phase is the phase where the energy park became an idea and got presented to the residents and the municipality. This phase is hoped to highlight what is successful when selecting a location and establishing a foundation for a potential positive dialogue between different actors.

The second phase is taking place when different actors made clear what was important to them about localization of green energy. A phase that is hoped to highlight how different actors exercised their agency to find agreement on a location fit for green energy according to the priorities of different actors. This phase will also analyze what eventual agreements has been made to make different actors approve of the energy park in Veddum Kær.

The third phase is analyzing the how the success is now the energy park is in operationalization. The aim of this phase is to analyze if different actors related to the case study still think of the location of energy park Veddem Kær as a success after it has become reality. This phase is assessed important for the people directly involved, but also in relation to if the case can be a good example for other cases in the future.

3.2 Method of interviewing

Brinkmann and Kvale has created a general method for conducting scientific interviews. In this section, it will be outlined how this scientific interviewing method has been used for this thesis.

3.2.1 Scientific interviews

As opinions on location of green energy is subjective, qualitative semi structured interviews fits well as a scientific method for this thesis:

“Qualitative research interview attempts from a viewpoint of subjective opinions to understand the world, folding out the meaning of their experiences and uncover the lived life experience ahead of explanations of scientific character (...) does not assess people as mechanically controlled (...) but on the contrary as persons, subjects that is, which acts and and actively are engaged in the creation of meaning” (Kvale & Brinkmann, 2015, page 19) (Translated from Danish).

Despite its subjectivity it is still valuable scientific material. This is because human actions and opinions are subjective. These actions and opinions are decisive for localization of green energy. This subjectivity has the strength that carefully selected individuals can give a deeper understanding of a process on a specific case than any general knowledge and quantitative data can do (Kvale & Brinkmann, 2015). This correlates with investigating human actor’s role in exercising agencies in path-development. As it is humans and their actions that create activity. This includes the economic and cultural activity. It is important to understand, which individuals defined as what type of actor did what in the case of the location of Energy Park Veddem Kær and what agency/agencies they have exercised. By gaining this subjective data, an understanding of how the process was influenced can be unfolded.

3.2.1.1 In-depth interviews

The energy park project proposal was something outside of the existing agencies in Vedum. Therefore, it is interesting to both have an in-depth knowledge from some of the actors in the center for implementing the new firm in Vedum. Both a representative for the new firm who can contribute to the understanding of how a new firm and what agency it can exercise when seeking to expand its production of energy into new areas, where the type of industrial path is not evolving into green energy “by itself”. Likewise, it is interesting to have empirical data from an interview with an individual who has a large knowledge and deep understanding of what happens in the local community. These two respondents are assessed to contribute with experience that can help link the different actors and their exercised agencies into a chronological understanding.

The actors chosen is the country manager of Eurowind Denmark A/S. A representative from a new firm to give an insight in how the process initiated and what they experienced as successful in this case. Particularly relevant because a large company which is an outside actor proposing a location to establish green energy in an area where it has no incumbent advantages. Eurowind as an actor was as an initiator and direct interest holder in the Energy Park Vedum Kær. It is an important stakeholder to have a representative for an interview as this actor is the initiator of implementation of a new agency in Vedum.

The other respondent is an individual from Vedum who has a large knowledge of the area and an understanding of what happens in the community. This actor is the vice chair of Vedum Landsbylaug. A local citizen in Vedum. A civil residents village association which constitutes of the citizens of Vedum and is acting on local issues such as “beautifications” of the village as well as the general interest of the citizens of the village (landsbylaug, u.d.). An important individual because as a representative for the interests of the people of Vedum, this individual is perceived to have large knowledge on what is happening and why it is happening around the village. The respondent is assessed to have some knowledge about why the people of Vedum in contrast to almost any other case did not protest and complain, but things instead

went through “smoothly”. The vice chair of the village association is one of the important links between the incumbent firms and established Veddum and the dialogue to the new outside new firm, Eurowind. (See introduction to case area section for more specified information.). The vice chair of the village association respondent is a good choice to interview to understand what the incumbent status is and what agencies are representing which aspects of the community.

Human relations can give an insight into, how an energy park can be established in an area with a high support and a seemingly general satisfaction about the project. A semi structured form of interview is achieved by combining a conversation about the topic with a semi structured interview. This gives an insight into the subject through the specific example from the case area (Kvale & Brinkmann, 2015). Dynamics about the finding a successful location for green energy is hoped to be achieved by doing this.

The two actors above are in the attempt to answer the research question seen as key actors to the case. Further these actors have been in the process from beginning till recent day. This means that in the different phases of the establishment of Energy Park Veddum Kær and especially the village association respondent is in touch with the daily life in the village now that there are clear and visible energy infrastructure in the area. Meanwhile the Eurowind A/S respondent particularly can put a spotlight on what it takes to first decide to select an area to go into dialogue and as a company outside the local context must understand what they must compromise and, what they can offer the local community to get acceptance of their proposed project. This information from these two actors can be used as a red thread in the understanding of the process the case, and what the area has gone through.

Actor:	Role:	Respondent/Appendix:
Country manager of Denmark in Eurowind A/S	Representative of the green energy company in the case study	A
Vice chair of the village association in Veddum	Has a representative role of residents in the case study area	B

3.2.1.2 Pop-up interviews:

In-depth interview respondents' knowledge will not stand alone. Pop-up interviews with other random local citizens which are residents. These actors can all be incumbent firms, facilitating actors, policy makers, fringe actors and theoretically also representatives for a new firm. The pop-up interview respondents are all having in common that their residence or significant parts of their daily activity is in the case study area. These "popup" interviews have been conducted during fieldwork in Veddum. Pop-up interviews are less intimidating for the respondents as they are a question from a curious stranger where they freely can say they are not interested in answering (Kvale & Brinkmann, 2015). Every random person in Veddum asked, went on to give an answer. There was not a single person not answering. The reference to those interviews will be described as "pop-up interviews", further on in this paper. By conducting "On the spot interviews" along the more "official" semi structured in-depth interviews, the validity of the evidence is strengthened from the in-depth interviews, if the answers from the respondents in the "pop-up interviews are in alignment with the in-depth semi-structured interviews (Kvale & Brinkmann, 2015). Additionally, more respondents can potentially add important points and nuances contributing to the findings of the research to (Kvale & Brinkmann, 2015).

Below is a scheme of the "pop-up interview" respondents:

Respondent:	Question/Answer: "How has the location of Veddum Kær energy Park affected you?":
Young man, Local grocery store manager. He is from the neighboring town Als, which had a similar offer from Eurowind, but the dialouge never started because people were so fiercely against it.	"Here it went relatively peaceful. But if there will be attempted to be established more, I think people will be raising to protest. Especially in direction of the coastal zone where there is a lot of tourism." "I live in Als and there it never even came to a dialogue, despite Eurowind had wish for a similar project there. It was especially the tourism industry we have on the coast that people were afraid would be harmed if there came noisy wind turbines in the landscape".
Woman	Thinks it is fine. "Concerns never became a reality". Eurowind listened when "we" raised concerns, mainly with shadowing and

	<p>noise is not particularly an issue. Except for one or two days “and I live in the middle of the village”.</p> <p>Happy about the benefits and money received each year by the resident’s association. Thinks improvements of the area is really positive thing about the energy Park Veddum Kær.</p>
Woman Newly moved to town	<p>Not bothered at all, neither did it affect her consideration on buying a house in the village or not, it was rather something I saw as an opportunity for Veddum when considering moving here.</p>
Man in his 50’ies	<p>Doesn’t bother him. Not interested in engaging in these kinds of processes.</p>
Man in his 60’ies	<p>“Wind power is superbly fine. “</p> <p>Expressed a big satisfaction that it brings in a lot of money to the town.</p> <p>However bothered: “Regarding the solar panels, well I do not understand as long as there are still people who go hungry in this world, why we build solar panels on land that could be used to rowing that food as long as we still got roofs that are not covered in solar panels”</p> <p>Satisfied with the shares that were possible to buy from the energy park Veddum Kær.</p>
Couple living on the edge of the village towards the Energy Park Veddum Kær	<p>They are fine with the energy park to be where it is. Mainly because of an open and including process from early face of pitching the idea till it was built and if there are things that must be considered after it is established.</p> <p>The man spontaneously mentioned there were 3-4 critics which all got silent when economic benefits where offered to the village and the people living in the village.</p> <p>They are happy and proud because their village trough pragmatism has contributed with a positive “climate effect”.</p> <p>The man says: It is easier to accept the solar panels since they are established on “terrible” soil for agriculture, it was not much loss anyway.</p> <p>They are both Happy about their sons have significant shares in the energy project.</p> <p>Proud of contributing to solve the pollution problems.</p>
Man living on farm very close to the wind turbines	<p>“Very noisy, but I think the compensation for loss of value to my property is fair.”</p>

	<p>"I Really like the advantages we get out of having them here" (referring to the initiatives that can be funded from the village association)</p> <p>Also happy about the shares the households were offered to buy.</p>
<p>Woman with her two small children she just picked up from the local kindergarten</p>	<p>"Well, they got to be located somewhere".</p> <p>We (husband and her) But there is made a shame out of our worries. We imagined problems that never happened. "</p> <p>Additionally the kids have fun going for walks out under the wings of the wind turbines.</p> <p>Happy about what initiatives can be done in the area from the money the village association receives.</p>
<p>Man walking his dog</p>	<p>"Well, the landscape has never been quieter. When I was a kid about every farm had its own not very technologically silent wind turbines which functioned as water pumps and what not. Compared to that, it is much quieter now".</p> <p>Thinking it is a good deal with the shares distributed to the households.</p>
<p>Man</p>	<p>"It feels safe that Eurowind is the main stakeholder. They got the hand at the stove so to say, so if somethings go wrong, this big professional company among all has the biggest interest in fixing it. I feel it is good to be having professionals as a part of the ownership. "</p>
<p>Woman</p>	<p>Happy about the shares of the energy park the households had the ability to buy.</p>

3.3 Document analysis:

This element of a research design is hard to avoid in an academic report.

Interviews and observations made by the author of this thesis are in contrast with documents. Documents can make the thesis reach beyond data created by the author. The documents limit the author's influence on empirical data from these documents (Bowen, 2009). However, these empirics are still used in a constructed research design by the author. In this way documents are still knowledge created as a part of the analysis that creates empirical knowledge (Bowen, 2009).

This both causes advantages and disadvantages. One example is documents can contain background knowledge not obtainable from interviews and observations (Bowen, 2009). In this thesis, this is done through a historical context of the conducted

case study. Other examples are that documents can include statements by experts and give scientific elaborations on observed phenomenon. Documents can function as an extension to a specific study as they can describe experiences and scientific data conducted outside that specific study in which these documents contribute as a part the analysis (Bowen, 2009). In this thesis document analysis is an element of the research design.

3.4 Geographic information systems

The geographic information system (Arcgis Pro) is used to visualize abstract data. Geographical data is visualized and presented as maps. Geographical information systems become useful when describing where different locations and places are in relation to each other (Ballas, Clarke, & S. Franklin, 2017). In the analysis this will be put to use in visualizing different aspects that will be described as significant to understand the context of why actors act as they do. The data is from “dataforsyningen.dk” the public available data from Danish authorities (Dataforsyningen, 2023).

3.5 Presentation of findings in analysis:

For giving predictability to the approach of the analysis and clarity of the analysis the figure from (Jolly, Grillitsch, & Hansen, 2020) will serve as presentation of the findings in in the analysis.

	PHASE N	Schumpeterian innovative entrepreneurship	Institutional entrepreneurship	Place-based leadership	Structural maintenance
New firms					
Incumbent firms					
	PHASE 3	Schumpeterian innovative entrepreneurship	Institutional entrepreneurship	Place-based leadership	Structural maintenance
	PHASE 2	Schumpeterian innovative entrepreneurship	Institutional entrepreneurship	Place-based leadership	Structural maintenance
	PHASE 1	Schumpeterian innovative entrepreneurship	Institutional entrepreneurship	Place-based leadership	Structural maintenance
New firms					
Incumbent firms					
Facilitating actors					
Public policy actors					
Fringe actors					

Figure 1: The model inspiring the data presentation of data in the analysis section (Jolly, Grillitsch, & Hansen, 2020, page 180)

Each of the three identified phases will represent its own section of the analysis. It will give a strong direction and stable course with continuity in the understanding of the case for the reader. As a sub conclusion for each section of the analysis a table follows over the actors of the case study and their exercised, often multiple agencies, agency in the specific phase.

The methodology section outlines the practical operationalization of the theory section.

4. Analysis

To contribute with knowledge to the field of what makes location of green energy projects successful, a case study will be conducted with the applied while the other methods in parallel are working as the glue binding the case study scientifically together. The analysis will operationalize the inspiration from economical geography as outlined in the theoretical section. This will be done through a case study of the location of Veddam Kær energy park with the research design described in the methodological section. A sketch of the historical development will be presented prior to an analysis constituting of three phases representing one subsection each. The first phase is the phase where the idea was scheduled to locate a green energy project in Veddam Kær. The second phase is the process of finding agreements that could make the location if the energy project possible. The third phase is how Veddam Kær is being run after its establishment and if it is a success economically and socially. Socially must be understood as if the citizens of Veddam are satisfied with the project. This is important both for the integrity of the project as well as a display for elsewhere where other projects are proposed. If people can be satisfied in their daily lives where the green energy project is located close to them, it is evidence it potentially could be done elsewhere as well (Granovetter, 1973).

4.1 Introduction of case study

In this chapter there will be a section that outlines the considerations behind choosing the case of Veddam.

The history of wind energy exposes a huge paradox the current years since not a single wind turbine is scheduled to be established on land in the entire year 2023 in Denmark:

“Everyone is banging on for more “green power”, which is vital to solve the climate crisis and at once make us independent of Russian energy. Anyhow this year there will not be established one single new wind turbine on land in Denmark, the numbers from the Danish government body the Energy Agency. Year 2023 will result with a minus in energy from wind turbines on land, compared to the year before this is because every

year wind turbines are taken out of service. Personally, I think it is a catastrophe, Kristian Jensen, the CEO of the industry association Green Power Denmark” (Sæhl et al., 2023) (Translated from Danish).

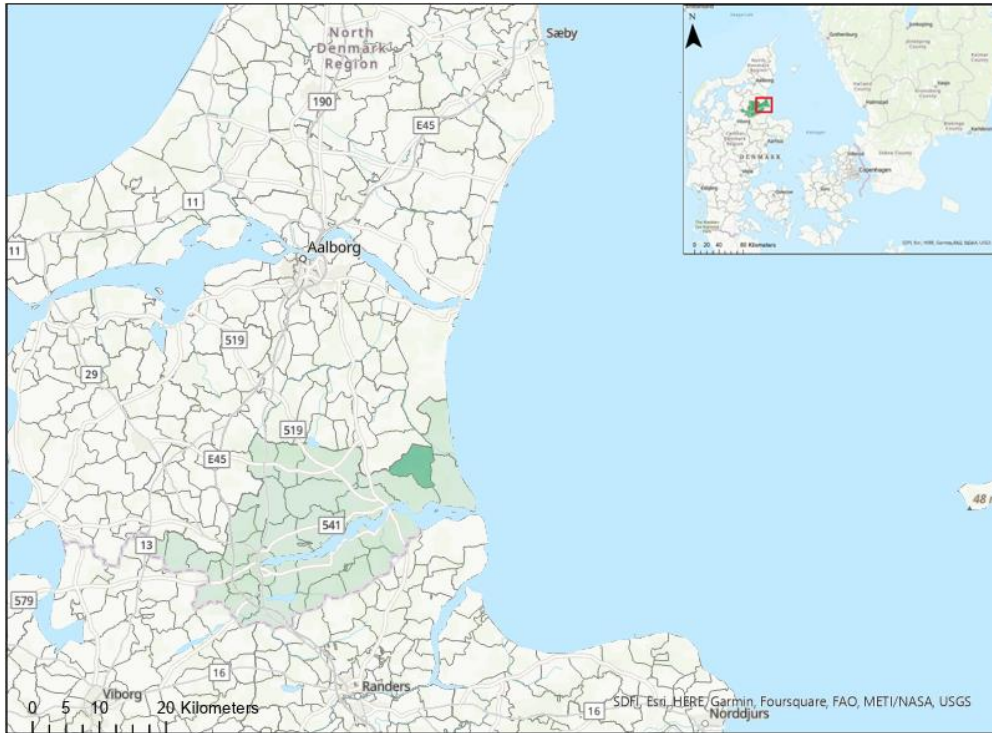
Danish scientists in energy are warning about that the implications of the lack of establishing new wind power on land reach way further than just isolated national issues:

” If not, we are to have established as much as one single wind turbine in year 2023, then it is a” bankruptcy” in the context of the countries which take Denmark into account as a pioneering country”. Brian Vad Mathiesen, professor in energy at Aalborg University in (Sæhl et al., 2023). (Translated from Danish).

With Denmark having a status as a pioneering country in green energy in the eyes of many other countries, a case study in how to make a successful green energy project with mixed energy on land, hopefully can highlight knowledge that may become relevant beyond the Danish borders.

Therefore, it will be interesting to investigate a successful case with the combination of wind turbines and solar energy to represent both types of energy in the desired energy mix.

The case study will be conducted in Veddum which is a small village with a nearby site that has become location for an energy park delivering energy enough equivalent to 33000 thousand households (Eurowind A/S, 2023). An energy Park is here understood as a cluster of wind turbines and/or solar panels.



Scale 1: 1:710067. Figure 2: Map showing Mariager Fjord Municipality within Denmark (Darkgreen) in the map in the upper left corner and Skelund Parish highlighted in Darkgreen within Mariagerfjord Municipality. Map source: Self-made in ArcGIS ProData used for this visualization is from (Dataforsyningen, 2023).

Veddum is in a rural setting, meaning the space needed to localize big green energy projects is present.

Despite Veddums proximity to the energy park as visualized on figure 3, the media stories appear to be overwhelmingly positive and portray the case as there are virtually no complaints opposite of what the case in recent years has almost always been. As established in the introduction to this thesis, it seems there rather is satisfaction with the energy park (Munksgaard, 2023).

Something that makes the case interesting to study as a successful case is a good example to learn from what agencies that have been exercised by different actors to facilitate a successful location of green energy in a close proximity to a village as shown on figure 3 in the following page.



Legend:

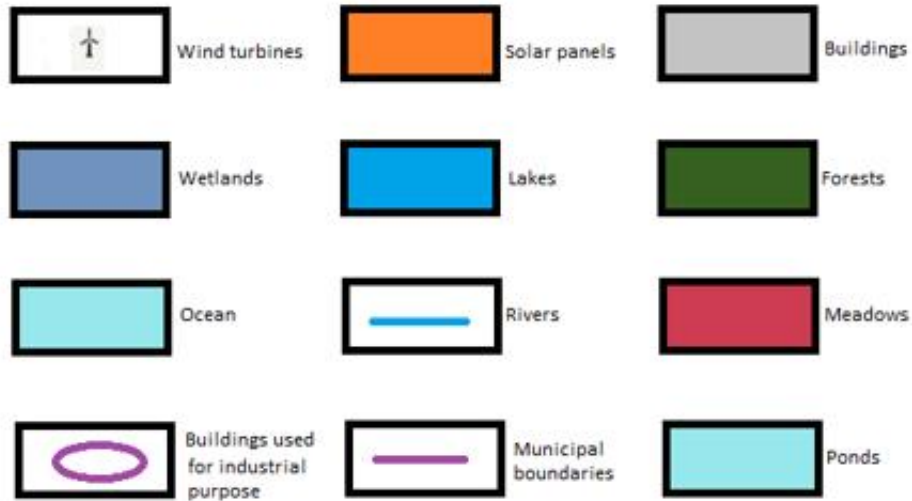


Figure 3: Map showing Veddum and Energy Park Veddum kær in geographical context. Map source: Selfmade in Arcgis Pro. Legend made in arcgis pro and modified in photoshop to make it explicitly fit this specific case study better. Map Data is from (Dataforsyningen, 2023).

4.1.1 Historical industrial path development:

In this subsection of the introduction to case study section a background for the path-development of Veddum will be outlined. Sources of context related industrial path development will be combined with historical data.

A demographic overview of the population in the area is used for the overview and correlating industrial path to population. Population development is an indicator that signals how much population the industrial path can sustain (Jolly, Grillitsch, & Hansen, 2020).

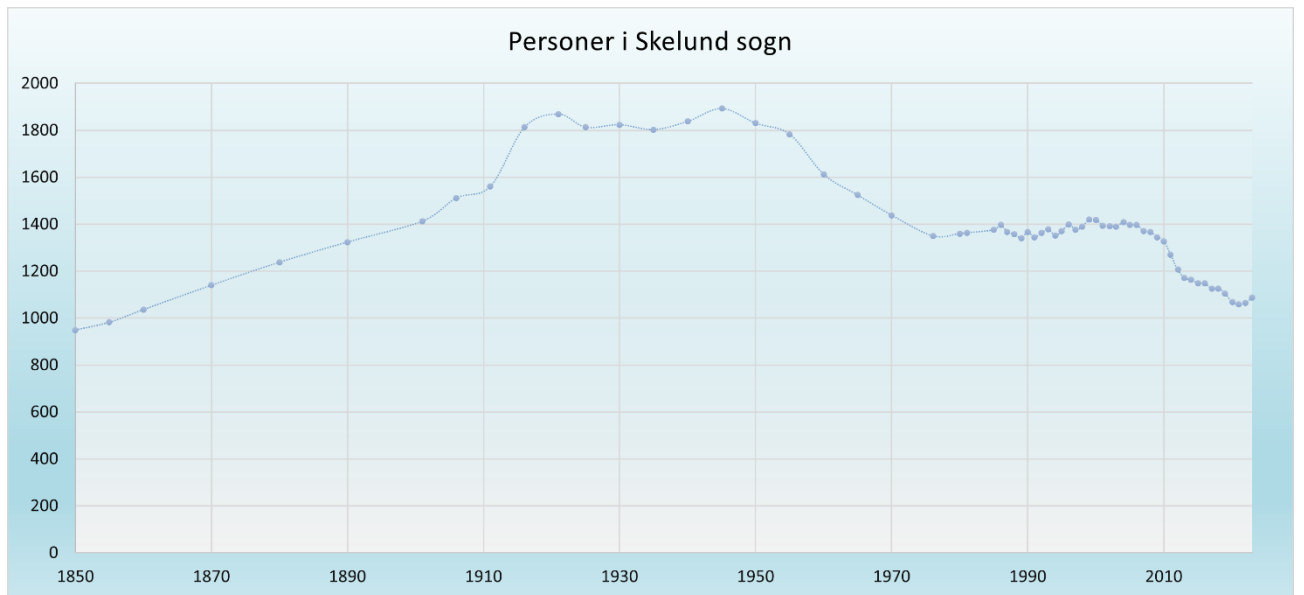


Figure 4: Graph of population count in parish Skelund. Graph is from (Jørgensen, Folketal i Veddum by og Skelund sogn, 2023) .

(Danmarks statistik, 2023) ;(Rigsarkivet, 2023).

Skelund Parish which Veddum is situated within has seen a historic development in its population decreasing since the 1940'ies.

Veddum has a many hundred centuries old history of Agriculture. The agriculture has slowly been concentrated on fewer and fewer farms over time. Meaning that the farms got bigger but there progressively has been fewer farms to sustain a livelihood for people (Jørgensen, Historie, 2023). Traditionally Veddum used to be one of the

largest clusters of farms in Denmark. The development changed this over time. The farms got bigger and fewer which made the farms moving out of the center of the village (Jørgensen, Historie, 2023).

A public actor emerged from around 1740. Education around the village started to emerge and got more established later (Jørgensen, Skoler i Veddum, 2023). That the area was a rural agricultural area could especially be seen in the description of what was offered alongside the housing the teachers back then got as a part of the payment for their role in communities:

“(…) piece of land on 6 6/8 acres, very fertile and close by the housing. There are 6 cows as well as a big garden, which provides a significant number of fruits.” (Bering, 1859).

Between 1869 and 1910 roughly 160 people where emigrating from the parish to the US (Jørgensen, Udvandring fra Veddum til Amerika, 2023). Despite this fact in the same period the population was still increasing in Skelund Parish from roughly 1200 to 1600. However, as the general population grew, the population started to decline in Veddum and other similar rural districts in the longer term:

“The heavy industry, for example the iron foundries were centered around the cities. In rural areas the industrialization brought new tools as for example the horse driven mower. Millenniums of Manpower intensive work disappeared in a few generations and rural districts were depopulated to the work requiring industries in the cities” ((National museum of Denmark) Nationalmuseet, u.d.) (Translated from Danish).

A result of new technologies introduced as trough the movement of people, goods and ideas creates change (Massey, 2008). This changed the rural areas ((National museum of Denmark) Nationalmuseet, u.d.)including Veddum. Food from agriculture remained as important to society as it always has been since people need food for survival, but the incumbent path as a result where of less importance to the rural area in Veddum as the industrial path of the area could support less people’s livelihood ((National museum of Denmark) Nationalmuseet, u.d.). The agricultural industry is the main industry in the area and agriculture is seen as the main group of old firms.

Meanwhile in 1900 Veddum was connected to a new railway which gave some economic growth especially related to easing the transportation of people, goods, animals, and mail. The rails were however shut down again in 1969 as private road transportation had taken over the development of transportation (Jernbanen.dk, 2023).

4.1.2 Recent industrial path development

Veddum is in a municipality where pendling is increasing. Across Denmark it is a general trend and, in a study, made by Danish Industry, an interest organization for Danish companies and firms show that the general trend of increased pendling is driven by the rural areas. Simply because the path development in the major population centers are the ones creating the most jobs and growth (Friis, 2021). It must be understood as Veddum as a rural part of a municipality far from the bigger municipalities also is a part of this trend. Something that fits in relation to path-development, that describes that it is in the population centers that are the main drivers behind economic growth and path development (Jolly, Grillitsch, & Hansen, 2020). In context to the case study, it is further important to notice that because of globalization especially in rural areas new firms from outside that area can establish their agency for path-development (Jolly, Grillitsch, & Hansen, 2020). Eurowind A/S will be considered a new firm establishing an agency in this case study. This is because Eurowind A/S have had no activity before in the area and wish to establish itself unrelated to any actor already existing in Veddum. Despite there has been a few wind turbines before it is considered a path development as those wind turbines has been small scale and mainly for some local investor's ability to fund their own electricity (Respondent B, 2023).

By setting the scene with the industrial-path development, in the following three sections the analysis of the three phases will be carried out with inspiration from the theoretical background and operationalized with the approach described in the methodology section.

4.2 Phase one: The Preparation phase

In the first phase an analysis from the case study about what can be learned about success and failure in establishing green energy projects on land. The first phase is a vital as the agency the different actors can exercise have the influence of proposing them and setting the stage for what kind of process there will be on the road to success or failure for locating green energy in the case study area.

To put this case study into context there will be referred to an additional proposal by Eurowind to the village next to Veddem called Als, where there never came anything but initial talks as the citizens of Als were very skeptical due to fears over consequences for its incumbent firms (Respondent A, 2023); (Respondent B, 2023). It was a fear that the tourism industry could take damage and hurt the local economy (Respondent B, 2023).

Something that can suggest place-based leadership from incumbents' firms can be to protect the local industrial path against perceived fears of new firms seeing an opportunity in an area. A quite common tendency in resistance to locating green energy in an area. For example, because of fears over potential negative consequences for the tourism industry (Dalton & Collins, 2022). An example of this plays out Wales, UK the people in the countryside fear for their tourism industries that attracts tourists to a scenic and peaceful countryside. If green energy is located there (Duggan & Pigott, 2023). In the Welsh example the same problem is like elsewhere, that only a fraction of green energy can be offshore, but for technical and economic reasons most of it must be on land (Duggan & Pigott, 2023).

The idea of getting a new a solar and wind-power energy park came when Eurowind, which was looking for opportunities in Mariagerfjord Municipality to establish green energy projects. Eurowind were assessing how the firm can expand its business:

“In Mariagerfjord four areas were pointed out. Veddem Kær were among those four places” (Respondent A, 2023).

For Eurowind a normal it is procedure to have multiple potential locations for the project (Respondent A, 2023).

Euro wind Energy is an actor from outside the local area and represent a new development and a path that has not been used before. Therefore, in this case study it is defined as a new firm by the definition in the theory chapter in the area. It is a new firm exercising a Schumpeterian innovative entrepreneurship agency, looking to introduce a green energy project on land in an area with a path where the firm will not be incumbent. It is argued so because of a green energy park can become an innovative new approach outside the existing industrial path of Vedum which can moderate what economic activity is present in Vedum.

When selecting concrete areas for projects, the next step taken by Eurowind was to hire some anthropologists for the task:

"(...) the process was led by four anthropologists whom where hired to figure out what to do about this process. Here things like noise, shadow and other concerns were taken seriously and advised to consider in the information process. Also, what means from the green profit could come out of it so this was taking into account what where the negative and positive interests. These anthropologists came up with a summary of it all." (Respondent A, 2023).

To bring in anthropologists is in this case study seen as involving scientific facilitating actors. With theoretical background of this thesis in mind, these anthropologists are understood as scientific facilitating actors because they use expertise to help understand human factors decisive for a successful localization of green energy in Vedum Kær. These actors use their professionalism to increase the chances of a good communication between the involved actors (Respondent A, 2023). It is of importance as in earlier experiences Eurowind A/S has experienced a huge difference in what is the issues that can cause resistance to a location of green energy (Respondent A, 2023). Therefore, it was important for Eurowind to understand what the concerns was and what was the issues to be specifically aware of addressing in order to have the approval of the residents for energy park Vedum Kær:

"We have an anthropologist hired. (...) a lot of the resistance in these projects is the fact that an individual is not familiar with what having a wind turbine nearby includes."

Uncertainty facilitate scepticism. What is reality and what is wrong compared to what you can read on Facebook. (...) So a lot of communication is needed before myths are flowing on the social media. So that is also what it is about the day today.” (Respondent A, 2023).

Despite the efforts done to improve communication, in some cases the mood is initially against having green energy located nearby, like Als the village next to Veddum. However, in other cases it improves the chances to make people feel heard and make sure they are aware before even starting to be proposing any specific projects (Respondent A, 2023).

Eurowind then sent the Veddum Kær project proposal to the Mariagerfjord municipality (Respondent A, 2023). The municipality plays a role as both policy making actor as the democratically elected body that approves or disapproves business and development plans in Denmark. use and change of use for land and decides whether a new agency can be implemented or if the existing agencies can develop into areas that were not before approved for “industrial area”. It is therefore on one side a policymaking actor that is the official and formal actor that can exercise the agency to bring the institutional entrepreneurship to an area with the power to veto or approve proposed infrastructure projects such as an energy park (Kirkeministeriet, 2020). That practically makes the municipal council having the power to approve or reject projects like the case in Veddum. The municipal council brings democratic legitimacy to a path development and is therefore responsible to the citizens in the municipality. However, what usually is important is rather what old firms and other local residents and actors understood as fringe actor in this thesis think of a location for green energy. They are characterized as fringe actors because they are not having a specific role in relation to the green energy project except that they live in the area and thereby are affected by a potential green energy park located close to their homes and daily lives. Those actors mentioned are assessed to de facto have a bigger say than the policymakers’ point of view. This is as the theoretical framework outlines the rigidity of the industrial path. If the citizens of the municipality find a path-development unpopular, politicians are facing a threat that if they make unpopular decisions against the will of incumbent

firms and residents the citizens will simply elect other politicians and parties at the next election (Hough, 2002). However, it must likewise be stated if a location for green energy can gain support there will be a pressure on politicians to approve the path-development to remain popular. This is found by this thesis to make a case for changes can overtake the advantage from maintaining the incumbent. This should be the case for finding support among local residents. The municipality is further also an actor that has the role of being a facilitating actor as the officials in the municipality has the legal obligation and the expertise to facilitate mandatory processes of public hearings. (Kirkeministeriet, 2020). Respondent in Appendix B the vice chair of the village association explained It was also the municipality that informed the citizens in Vedum that there was a proposal for a establishing a green energy project in the area and gave information about public hearings and what the municipality could facilitate with (Respondent B, 2023).

This is where there is a big difference to the case in the village Als next to Vedum, as Als has existing agencies that sustains people's livelihood in the area and the fear over of a new agency can damage the incumbent made it an uphill battle for establishing a green energy actor :

"But in the village Als, the one next to here, were they also had scheduled a project of green energy they were incredible sceptical. Also that skeptical that they refused even to participate in such a "follow up" group. Any cooperation was rejected regarding that project. That makes it next to impossible." (Respondent B, 2023).

Something that gives a certain amount of randomness proving the fringe actor's agency as important.

An elaboration of this point:

"After all, this is what you see happening in places where the population has decided that they just don't want it. But that was not the case here. (...) But that's how it works in such a local community. If it was the case that we wanted to be part of it, then we would all be part of it. And some village associations like that have influence

enormously, I should say. Because they are the ones pulling the workload and so the public mood in one direction or the other.” (Respondent B, 2023).

This suggests, it is important that there is a common understanding that it can be mutually beneficial to the Schumpeterian innovative entrepreneurship actor and the residents as fringe actors and their already existing path. The village association as a role in Veddam and function as a representation for all residents in the village, however it is yet a fringe actor as it is not directly involved in proposing or creating energy Park Veddam Kær.

Despite individual citizens have the “fringe actor” title in the theoretical framework it might be misleading when it comes to the success and failure in green energy projects. They may be fringe in the context of industrial actors but their agencies however they have a decisive say and usually a strong willpower to either fight against or for a green energy project (Respondent A, 2023). This is similar to cases where a location fails to being a site for green energy (Simon, 2022).

The Appendix B respondent experienced Eurowind A/S were genuinely interested in listening to concerns from the residents as soon as the project was presented (Respondent B, 2023). That Eurowind seemed genuinely understanding made the process more likely to go into serious hearings and understandings (Respondent B, 2023).

The work made in advance by Eurowind A/S by involving Anthropologist understood as scientific facilitating actors, meant that there was already an understanding of what could be the concerns that could be the decisive issues that may or may not make residents being willing to listen (Respondent B, 2023).

As mentioned earlier Veddam has a history for agriculture and that is also clearly reflected upon from local citizens that has been part of the “pop up” interviews, along Appendix B have stated talks were about what people think about the land and its value for the Veddam area:

“I think all farmers will think it a shame when such land is made dear. (...) they don't like that you don't cultivate land.” (Respondent B, 2023).

Something mentioned in the “pop up” interviews as well where a man who is all in favour of the wind energy but has his skepticism about that the land has a value as agricultural value and that as long as there are people starving in this world, he found it unreasonable to use land for having space for solar panels. There is a tradition and culture around that the land is something fertile and fit for cultivating and fit agricultural agencies (Jørgensen, Historie, 2023). These statements show the meaning of the old firm to the residents is something that makes this paper finding it realistic that there must be a respect for the old firm and an understanding that a path addition must not limit or damage the old firms in a too excessive way. As there is a priority amongst the residents of Veddem that the old firm serves a very important purpose. The *structural maintenance* of the already existing agencies is a guarantee that the old firm can still serve its purpose. Important to have in mind how a new firm can be presented, especially considering the comparison with the case in Als and other cases mentioned in this section. Therefore place-based leadership seem like a vital component as to present an idea where the area can seem to prosper from the proposal. There are by other words small incentives for the residents to being positive of a proposal if there is an unaddressed concern relating to the incumbent firms.

If a project needs to have a realistic chance to succeed it is important that there is a willingness to listen from both the outside actor proposing a new agency and the residents willing to assess whether their concerns can be addressed (Respondent A, 2023); (Respondent B, 2023).

From the experience of Eurowind it is usually different issues that are important to address in different places.

It was important from the experience Eurowind already have from project proposals in other places that there is a constructive approach from the residents (Respondent A, 2023).

The respondent in Appendix B elaborated that it was about seeking the opportunity of the energy park rather than being “no-sayers” (Respondent B, 2023).

It is elaborated that demographically some houses have been “empty” and the development of the area has been difficult, so the residents had an open and positive approach to see if there could be benefits in accepting a green energy park (Respondent A, 2023).

As an area that has its challenges attracting new citizens this paper suggests a path development might be more welcome compared to places where the industrial path is sufficient to sustain more development.

4.2.1 Agencies in phase one.

Agencies exercised in phase two with the aim of making a localization for green successful.

Phase 1	Schumpeterian Innovative entrepreneurship	Institutional entrepreneurship	Place-based leadership	Structural maintenance
New Firms	Come up with a proposal and choose locations that could be fit for a green energy project.	Inform the authorities that they wish to make business and they wish to be greenlit through a formal process. Even in countries where it is not a legal obligation it may be advisable due to the authority, democratic legitimacy and professionalism the public authorities get from their public officials. Inform the residents to consider the project even before the official hearings start to establish a communication as early on as possible.	Consider the local community where the green energy project is proposed so the community can benefit from the new agency as well. Also make sure also that eventual obstacles are informed about to the green energy agency.	Make investigations beforehand on what is the consequences for old firms with a green energy infrastructure project in the area and propose the project in a manner that respect the importance of these already existing agencies.
Old Firms/Incumbent Firms	If the old firms support is insufficient in creating good	Take notice that they are invited to hearings and an official process	Green energy projects on land can have difficulties in	Make sure they understand what impact a

	development for the area there is a higher potential to accept a green energy project in the area as a path development.	about a proposed green energy project as well.	being even considered if the residents have a concern for the future of the incumbent firms' future. Help inform residents about rumors and facts.	new agency will have on them.
Facilitating Actors	Municipality officials: Invite to meetings. The New firm, Eurowind A/S hired anthropologists. This can have helped create an understanding of the case areas residents and industrial path.	Plan a process of public hearings and meetings to clarify concerns, ideas and wishes between the different actors	Make sure the residents have a good hearing process. Make sure that there is a conversation where resident can be part of the dialogue and not just use a formal formular as means of communication.	x
Public policy actors	Indicate whether there is a chance of approval or not.	x	x	x
Fringe Actors	Have a willingness to listen to the proposal. If the residents do not listen, then it can already be next to impossible to move on from the preparation phase.	Despite the village association being an informal and fringe actor in an official context, it often happens that the public opinion swings the same way. In this case where the village association is willing to listen to what is in it for the residents there is an indication of residents are willing to listen as well.	Being willing to listen and see if there can be benefits for the residents. Take action to organize a response and seek dialogue about disadvantages and potential benefits like the village association does in the case study of Veddum.	Residents need to make sure that the proposed agency can be added to the current path without being damaging to the already incumbent firms which in many households can be the source of income.

4.3 Phase two: Negotiation phase

The second phase aims to take learnings from what agencies which are exercised in the public meetings and the compromises the different actors have made to get the approval of the green energy park. The reason why that is important is due to as described earlier in methodology section is what makes agencies between actors facilitate a successful location of green energy.

Creating a framework for finding common ground

The respondent in Appendix A finds that in general that there were way more people indicating they were in favor of green energy parks around Veddem than people opposing. Veddem Kær energy park was planned and built before the Russian invasion:

“(...) after the invasion of Ukraine and it has been revealed our energy supply is not so stable as it appeared before. Now it has become more “accepted” to show support and ask questions such as “what if it comes, when what is it we can get out of the situation, can there be any advantages for us locals?” (Respondent A, 2023).

Regardless of the experience of Respondent A, it has become easier to vocal support for energy projects on land still no wind turbines are scheduled to be established in 2023 (Sæhl et al., 2023). The case of Veddem shows in that context it can be achieved regardless of what fluctuations energy prices will have post the invasion. This makes the findings of this analysis relevant beyond places that are heavily negatively influenced by the energy supply issues.

By law in Denmark the main part of the process in finding common ground between the actors is established by the municipality that facilitates mandatory public meetings and hearings on projects of for example infrastructure as energy is categorized as in Denmark (Lynard, 2014). However, what has been addressed on these meetings and in between is dependent on the different actors. Meetings where the municipal council sent relevant politicians to understand what was agreed on and how the process went (Respondent B, 2023). Something that made residents more comfortable as they have the final official decision-making power:

“After all, they are the ones you count on to take responsibility for such things”
(Respondent B, 2023).

Both key respondents mention that working groups were made at the public hearing, something important to the residents to take active participation in developing the plans and not just having the hearings to be presentations about what are the thoughts of on an energy park in Veddam. In the working groups the residents showing up could join a group with the topic of whatever was their major concern (Respondent A, 2023); (Respondent B, 2023).

The work done by the anthropologists in advance gave Eurowind A/S an opportunity to prepare solutions and suggestions to concerns before the meetings took place (Respondent A, 2023). The emphasis from the village association that the meetings had to be more than just presentations gave the residents the feeling of “ownership” about the project (Respondent B, 2023).

4.3.1 Minimizing the downsides

When Eurowind wants to go into Veddam with a big infrastructure project that takes space in the landscape, it may cause noise and other factors. It is important to have in mind that these issues can cause concerns. As referred to earlier in this paper, these issues can often generate a resistance that leads to fringe actors to resist a selected location for green energy so that it to an extent that the project proposals will not be carried out. To this case study shadowing was the main concern (Respondent A, 2023); (Respondent B, 2023). in that it was the issue around noise that was the main issues about the wind turbines. Also, *shadowing* was at the concern of the residents.

On the issue of shadowing Respondent A explains that Eurowind met the concern with pragmatism:

“Not in terms of size or how the energy Park looks, but rather about functionality. Because by only having five hours a year of “shadowing” the wind turbines are maybe a bit more still standing than they otherwise would have been.” (Respondent A, 2023).

The residents and Eurowind found practical solutions for practical problems in the process (Respondent A, 2023); (Respondent B, 2023). An important factor in having residents supporting the energy park to be in proximity to Veddum (Respondent B, 2023).

Further Respondent B elaborates on that it also is found significant for success that the workshops and concerns all have been made in person instead of written or online. Something keeping preventing misconceptions on written form, something that specifically on social media causes too much blurring of myths and facts (Granovetter, 1973); (Respondent B, 2023).

Another way to compromise and minimize downsides is compensation. In the pop-up interviews a couple who live close by to the energy park expressed that they were concerned about noise and shadowing at first, but they were listened to and were satisfied with the process hosted by the municipality. Further they were satisfied that their daughter got compensation because she lives within the zone where one can ask for lump-sum payments as economic compensation in case the wind turbines is of any disturbance or could lower the value of a property. Respondent B have the impression that in general people are satisfied with the compensation they have had (Respondent B, 2023). Compensation directly for those who have their property lowered in value seems to have been important for the energy park to succeed as it turned people concerned of the location into accepting it.

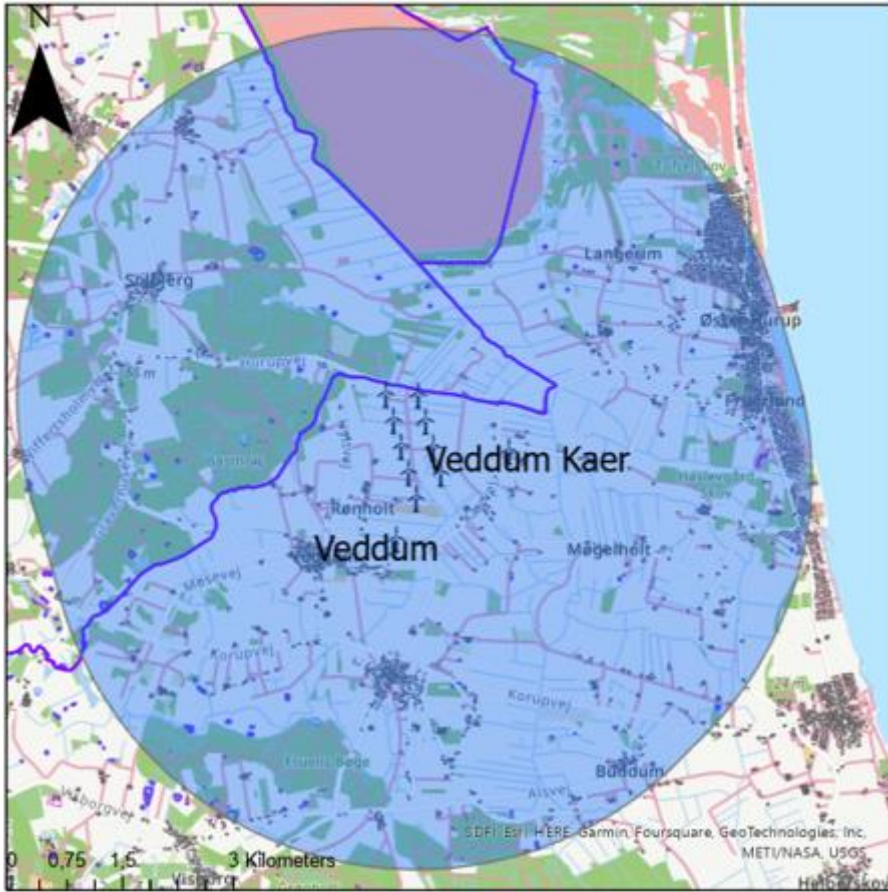
4.3.2 Making the energy park a benefitting part of the local community

To minimize the downsides is one part of the realization of the energy park. In Veddum it was also important to the residents that the energy park was not just something that was not bothering them too much but that it also was beneficiary for the community.













4.3.2.1 Money on the table:

As the energy park is a path-addition in the area it would also be more popular if there is income connected to it. In the case of Veddum which is in Denmark it is the case that by Danish law the population living within the vicinity of 5km from wind turbines will

be offered to buy 20% of the shares of the energy park. Each household is offered to buy a share equivalent to that the 20% are equally divided on the households in the 5-kilometer zone. If not all the shares are bought, then the rest can be bought from the other households within the 5 km zone. If all shares are yet not bought the rest can be bought by anyone else living within the municipality ((Gilbjerg Vindmøllelav I/S, 2012)). A map in the following page visualizes the geographical context for this 5-kilometer zone.



Legend:

	Wind turbines		Solar panels		Buildings
	Wetlands		Lakes		Forests
	Ocean		Rivers		Meadows
	Buildings used for industrial purpose		Municipal boundaries		Ponds

Scale 1:74000. Figure: 5: A 5 km zone around the wind turbines showing which properties are eligible to buy shares in the case study. Source: Selfmade map in ArcGIS. Legend made in arcgis pro and modified in photoshop to make it explicitly fit this specific case study better. Data is from (Dataforsyningen, 2023).

A significant number of households bought those shares, which gives a local goodwill that the energy park has a good production of electricity as it is something that boosts the economy of the individual citizens (Respondent B, 2023).

This is something several in the pop-up interviews also mentioned that they find it positive and something that makes the sentiment for a successful energy park higher. In the pop-up interviews several respondents mentioned spontaneously that they were very satisfied with that move. Something Respondent B also finds of a high importance (Respondent B, 2023).

The case in Denmark is that it is obligatory to offer 20% of the shares to those living within a 5-kilometer range of wind turbines that are to be established (Gilbjerg Vindmøllelav I/S, 2012). Regardless of it being a legal demand or not, it is something that strengthens the case when there is an opportunity to get shares and have a part and economic benefit if having a green energy project nearby.

4.3.2.2 Development of the case study area

Further a man in a couple who answered the pop-up interview also elaborated on that when there “came money on the table” it made the few vocal protesters of the project silent. The man is referring to is an agreement that Eurowind cash in 160000 dkk.- each year. Respondent A likewise finds it a good deal and mention it to be something that the residents find important:

“Here they saw “a light” in this project. We pay (...) per year to a fund, that then again is shared out between projects or “associations” in the area to do good things for the kids or other. Money the parents otherwise should pay out of their own pocket.”
(Respondent A, 2023).

A point that is interesting in relation to the development of demographics and what a green energy agency can contribute to a path-development. Respondent A experience that the questions in villages in contact with Eurowind has started to think more about potential benefits after the invasion of Ukraine.

“(…)Can it attracts young families with children rather than the opposite that they move away from the area because nothing happens?” (Respondent A, 2023).

The village association is receiving 160.000 Danish Kroner (\$23.663,74) per year, which it freely can administrate. Money that has been spent on renovating and improving the local kindergarten, getting a new roof for the local grocery store and many other projects. Money that remains in the area regardless of people having bought shares in the energy park remain living in the area or move. Money that also is hoped to bring opportunities to be more a more attractive to move compared to other rural areas. Something found particularly important by Respondent B. The money will be cashed out each year by Eurowind A/S as long as the energy park keeps running (Respondent B, 2023).

This aspect was also something almost all respondents in the open question pop up interviews mentioned as something they found particularly positive in the process that they could get agreements benefitting the local community. An economic boost for the community brings in new opportunities and the energy park become an economic benefit for the community.

4.3.3 Location, location, location:

Considering location of the project, Respondent A explains that despite much media attention that not many people who would complain about offshore wind relative to energy on land Eurowind as an actor in the energy market need to have a focus on that a lot of the energy needs to be on land:

“Land is necessary because of price and because of distance. It is better to produce the power where it also is used. (…) the less distance the less cables is needed. But in practice both wind energy offshore and the green energy on land is needed. Because we are going to need a lot of it.” (Respondent A, 2023).

So, the necessity of projects on land like in Veddum is because that logistically the Caples must be close to the consumer when society will electrify its energy away from

fossil fuels (Timblin, 2022). The further the Caples must transport electricity the more of the total capacity of the grid is used. Geographic Proximity of energy production to consumption is therefore needed (Timblin, 2022).

However, placement on land can create certain issues with incumbent firms. In the case of Veddum mainly because an energy park in Veddum Kær will have to convert agricultural land. A man in the pop-up interviews mentions how he has difficulties with land that could be site for agriculture is covered in solar fields while people are starving elsewhere in the world meanwhile rooftops are uncovered by solar panels. Something taken into consideration when finding a location for green energy in the case study area:

“it was used to grow grain etc. (...) And they can still do that themselves, even if there are wind turbines out there. (...) where the solar cells are. But it might not have been the best soil if it had been low-lying soil like that. (...)It is not very fertile soil.”

(Respondent B, 2023).

That is an example where the incumbent firms are taking part in finding solutions regarding a green energy park. Taking place-based leadership and strategically taking out the soil that has a poor outcome for agricultural purposes has been a good action as there can be room for something new without having to compromise much with the incumbent firm. Also, the amount the landowners received for selling of that land is probably higher than the outcome from the crops anyway (Respondent B, 2023):

“(...) then one must pay what that kind of land costs to obtain that land. This can be a one-time payment or an annular payment for a certain percentage of the revenue generated by that wind turbine. “ (Respondent A, 2023).

In addition, it was not a place that had any recreational use anyway. Something that made the location fit for the purpose. Meaning there were no lose for the residents because of the placement (Respondent B, 2023).

There was a good a good will from the farmers owing the land to sell it off to Eurowind for the purpose of green energy on the site. A. Something likely possible as the mood

seemed to be in favor of the energy park. If a landowner would sell land to Eurowind despite the public mood would be against it, Respondent A think that the landowners would have refused if it caused upsets and people to be at odds with each other over the project (Respondent A, 2023). The land with the poorest soil for agriculture was in question for sale. Something considered a win-win according to Respondent B (Respondent B, 2023).

4.3.4 Agencies in phase 2:

Agencies exercised in phase two with the aim of making a localization for green successful.

Phase 2	Schumpeterian Innovative entrepreneurship	Institutional entrepreneurship	Place-based leadership	Structural maintenance
New Firms	Be ready to compromise on the practical day to day running as for an example with shadowing in this case study, Also if it means it the project will not bring in the ideal profit as scheduled when the project was initially proposed.	Let the process be a work progress where the shape and agreements about how the project practically should take shape is a process where residents are involved.	Adapt the specific project proposal to be in harmony with the incumbent agencies.	Find the location with the least value and the least disturbance for the incumbent firms and fringe actors. Make compromises despite a loss in income as for example the example with shadowing.
Old Firms/Incumbent Firms	Engage in finding a location where the new agency does not disadvantage the incumbent firms. The example in Veddum where poor soil for agriculture is taken out is a good example. A contrast to Als where incumbent firms have stopped development of green energy on land.	A location is a must have for a green energy project. Contribute with finding a location that fits the purpose. If it can also be beneficial to the old firms in one way like directly economically as in the case of Veddum it can be a win-win.	Actively help find solutions for the green energy project that is not necessary for the incumbent firms. If incumbent firms exercise its agency in being concerned over a future with a positive development resident, where many have their income from incumbent agencies in the area, will be more likely to resist	Help find solutions the green energy project that is not limiting to the incumbent firms.

			green energy on land as it happened in Als, the village next to Veddum.	
Facilitating Actors	Understand how the process can also benefit the local area and its residents who live where the energy park is proposed.	facilitates the meetings and optionally assist the residents in making the green energy project valuable for the community as well. A professional and neutral frame for the process in compromising on a green energy project. make sure that there is a conversation as in the case study and not just a formal presentation. A process where people can be working in groups and concerns can be addressed with practical solutions.	Use the knowledge gained. As for an example in the case of Veddum from anthropologists hired by the new firm to clarify what concerns a green energy project might entail.	Eventually Help find a location that is acceptable for both incumbent firms, new firm and residents.
Public policy actors	Listen to how the different actors see the new agency becoming profitable for the new firm simultaneously to the residents.	Approve or disapprove the project proposal.	Understand the pros and cons of the project to decide in alignment with the wishes of the residents. Understand what conditions must be written into the legal conditions for the project to minimize the negatives. Make sure the approved project, incumbent and the new actors simultaneously benefit so the path forward is a hybrid path of the incumbent and the new firms. A path	Have the interest of the incumbent agencies in mind and make sure that the new agencies are not causing disadvantage to the already existing path.

			that must be to the benefit of the residents as well.	
Fringe Actors	<p>Participated in discussions and had their questions answered in person with experts and officials from the municipality in order to avoid misunderstandings and part myths and rumors that for example can be widespread on social media platforms. Something that in this case clarified doubts.</p> <p>Make a benefit out of it by directly having shares of the energy park split between the households for a direct economic benefit.</p> <p>Make the community benefit from it.</p> <p>The local area it will show more support if there, as some would say, is an economic advantage to it, while others might call it a compensation for having tall wind turbines and a field of solar panels in the area.</p> <p>Both when it comes to households having direct shares in the project but also if the green energy project in particular can have economic benefits to common projects in the community such as money that can be spend on improving the area by resident associations or other democratically functioning bodies run by the citizens for the citizens.</p>	It is recommended that the green energy park becomes an actor of benefits for the community too. A path development is not likely to succeed if it is not rooted in the community.	Must be invited to the process and have an actual say on location, and concerns such as noise etc. Important that concerns are listened to and that the project is compromised in a manner that fits for the local area for residents to be supportive. For example, when it comes to shadowing as in the case of Veddam there was made a clear agreement people could agree upon. The process of getting the acceptance for the community is vital in this case.	It is beneficial to the support, that the location is not an important place in terms of recreational use or cultural matters. The less the placement means to the life in the area the better the placement it is for the success of a green energy park in regards of local support.

4.4 Phase 3: Operationalization of Veddem Kær energy park



Figure 6: The view from outside the grocery shop in centre of village Veddem. Source: Own photo, April 2023.

The phase three is an important phase as well. It is the phase where the agency is in operation and there are nine wind turbines each 150 meters tall and a field of solar panels that is generating power for ~33000 households (Eurowind A/S, 2023).

The reason for assessing the third phase is to know if there has been a success and if all actors consider it a beneficiary agency. It is important that all the work done in advance of establishing the green energy park has been worth the effort and it is something residents as well as Eurowind are satisfied with. One of the parameters being a success is, that the energy park is economically profitable and something people are satisfied with for it to have the best success of functioning forward.

Notably it is also important that the people who lives in Veddum are satisfied living with the wind turbines and solar panels in their backyard.

It is also considered important that the energy park is something that is seen in a positive way in the local community as the case can be an inspiration for other areas (Granovetter, 1973). Positive cases are inspiring through positive communication between residents. Mainly fringe actors would warn others if a dissatisfaction among the resident were the case after establishing a green energy park (Granovetter, 1973).

4.4.1 Satisfactory realization?

Eurowind find that regardless of the compromises made that brings down the income then the turbines must be shut off due to shadowing etc. it is still a good agreement: *“That has a consequence of 3%, no rather 2% of that energy it could generate during a year is not generated, but on the contrary the project has actually become a reality.”* (Respondent A, 2023). The company hopes to establish more energy parks in a near future as electricity from the sea has its limitations and the company expects that: *“(…) the electricity demand will double or quadruple over the next ten years(…) Land is necessary because of price and because of distance. It is better to produce the power where it also is used.”* (Respondent A, 2023).

This indicates that Eurowind are satisfied with the actual project that was the outcome of the talks and negotiations that led to the final compromise which the municipal

elected councilors should vote on. By the municipal council it was politically approved quietly and without protests (Respondent B, 2023). A result of a presentation by the officials facilitating the public meetings and it was rather a “procedure” than an actual discussion as there were many actors giving in positive responses in the hearing processes according to both in-depth interview respondents. (Respondent A, 2023); (Respondent B, 2023). It is unusual because the more usual processes as described in the introduction of this paper where projects on land mainly are scrapped (Sæhl et al., 2023).

Something that suggest the residents and old firms as well feel their concerns have been addressed and that these actors see an advantage in the new agency. As suggested in the second phase it demanded a lot of work to be done. The significant involvement of public facilitating actors contributed to make the political process go “smooth” and therefore contributed to the successful case in Veddam (Respondent A, 2023).

4.4.2 The path addition

The point of having the incumbent firms to have good conditions alongside the new agency was also important in the case of Veddam.

A man in the pop-up interviews felt it was wrong as long starvation is present in the world, to use land that potentially can be fields to cover in solar panels. He suggested rooftops with solar panels as more appropriate in that regard. Respondent B elaborated that this man’s opinion is common and deeply rooted in large parts of the population of the area that it is agricultural land (Respondent B, 2023). However, the old firms found a solution by selling of land that had a poor outcome. By that action there is de facto not any virtual difference in the amounts of crops produced (Respondent A, 2023); (Respondent B, 2023). The awareness of being a food provider in a global world and the actual outcome for the incumbent firms where not changed despite a new actor was added to the existing path of the area.

One respondent directly mentioned that he was proud of Veddem is a part of solving the issues regarding pollution by having green energy produced in the area.

This is in line with a woman who mentioned she finds the agriculture of the area important, but that it was a good solution taking out the old seabed. She felt good about the area contributing to solve the climate issue.

The land sold to the new agency is instead something that has generated a value to the community according to pop-up interview respondents which most mention spontaneously that they are very fond of the money it brings into the community.

Respondent B elaborates on the meaning of one of the direct projects:

"(...) here in our own village, we have financed a campfire in our so-called urban forest, which has not yet been completely built in, but which is in the process right now. (...) a multi-court, which is also being designed, which is located next to our football club, but which is supposed to be a kind of playground for the city's children (...) A large multi-lane, which costs 1.2 million, or something like that. (...) with different ball game options(...) supported the local kindergarten with a few things. We have supported our "brugs" (grocery store), which needed a new roof (...)" (Respondent B, 2023). The village association receives 160000.- Danish kroner (\$23.663,74) from Eurowind each year, regardless of the income from the energy park (Respondent B, 2023).

Good facilities and facilitating actors such as kindergartens as well as options for groceries etc. are making an area more attractive for development (Jolly, Grillitsch, & Hansen, 2020). So, to have money to improve the area because of the new agency, is something that seems to make the case in favor of Energy Park Veddem Kær to set a positive example for other cases as there is a clear benefit to the community.

To outline this, a woman in the pop-up interviews also spontaneously mentioned that she recently has moved to Veddem and the energy park was not concerning her, as she was looking for places to live. She stated that it was the case that it was "rather opposite", as she saw opportunities in the benefits it could bring to the new place she has moved to.

4.4.3 To keep being a success

Some of the major concerns was that noise and shadowing would be a negative impact.

These concerns were however something that occurred only in a single pop-up interview. But the respondent felt treated fair due to the economic compensation he received for living very closely to the energy park. Elsewise the response is that people feel they have their concerns addressed or that they feel their concerns were not something that became reality. A woman from the pop-up interviews, walking her two kids home from the kindergarten initial response was that the wind turbines are “ought to be located somewhere, and why not here.” She stated that her and her husband cannot hear the wind turbines despite whatever concerns they had about them. She said that it has even become a recreational site for the family as especially the kids think it is rather cool to walk below the wind turbines, as somewhere quite extraordinary to “play” for the children.

A man told that the “landscape has never been quieter than it is now” as he explained when he was a child every farm had a wind turbine used for pumping water and other things, and contrary to those self-made noisy ones the modern-day wind turbines are quieter than ever.

Respondent B also has the belief that people are not bothered by the wind turbines. However, he thinks that people are fine with the current size of the project in the area, and it should not be scaled further up in new proposals (Respondent B, 2023).

The store manager of the grocery shop in Veddum mentioned in the pop-up interviews concerns about larger scaled energy park as the first thing when he was asked in the pop-up interview. For now, people are fine, but he believes the opposition to scaling the project up would be massive. It is at a scale where it benefits the community, and he mentioned that as he as a store manager in the town, is someone who got a good feeling of the public opinion.

Others mentioned they are feeling good about the constellation of the new agency and that Eurowind as a professional and experienced actor has the lead and responsibility

for making sure the wind turbines and solar panels are fixed and taken care of so they produce as much as possible, and the infrastructure can remain producing as long time as possible.

4.4.4 Agencies of phase 3:

Agencies exercised in phase two with the aim of making a localization for green successful.

Phase 3	Schumpeterian Innovative entrepreneurship	Institutional entrepreneurship	Place-based leadership	Structural maintenance
New Firms	Have expectations that the income can be smaller than the maximum calculated amount in exchange of a functional energy park. Compromises in this case that particularly is about shadowing. It is important the actor have a positive case to present to new places introduced to energy parks.	Having the approval from the municipal council of elected politicians. If future projects are to be considered by the council, it is advisable that if there already is a current green energy agency in the municipality that it is something the residents are positive about. It will make the case better for the council to approve more future projects.	Moderation is advised. Do not develop any further. If one project is successful in a place it is not necessarily advisable to plan on upscaling, so it becomes too much for the residents.	As the biggest actor in the agency, it is advised for the new firm to have the lead role in the maintenance of the energy park. It makes it easier for the residents and reassures them. the turbines and solar panels are repaired and kept in good shape because a professional company is behind the technical maintenance.
Old Firms/Incumbent Firms	Make something valuable for the entire community out of some place that was not important for the incumbent firms already.	For the success of the project, it is important that the incumbent firms are comfortable concerning the project, so they do not oppose the project to drag out the process due to unresolved issues.	It is suggested that the location of the green energy project also for future development is not something that limits the incumbent firms.	The incumbent firms can continue to maintain the activities of their agency/agencies parallel to the green energy project.
Facilitating Actors	Municipal workers are advised to learn from the process in Veddam and other successful cases. Assess how proposed projects can become a benefit to other communities in their municipality.	Present the results of the meetings for the policy makers.	Advised to learn from processes resolving green energy in case there are future proposed projects by any actor.	Also have in mind how to resolve issues with the actors of the incumbent firms to make it work both for the old firms and green energy projects.

Public policy actors	Be open to listen to but also set demands for actors who wish to establish green energy projects.	The actor Approving the project. The more the incumbent firms and residents in the area are in favor of the project the more successful and smoother and fast approval process it will become. It will also be more likely to pass with a majority the more the project is in alignment with the voters of the politicians.	Assess if green energy projects can be a positive path addition for specific parts or of the whole area the policymaking body is serving. If it can be a positive path, make plans and strategies for how it can benefit the residents.	x
Fringe Actors	Use agencies for obtaining direct income for households and capital for the community or other benefits relating to an agreement related to the green energy agency that has been added to the local path.	Important that issues of concern have been dealt with. residents are in favor and see a benefit in the project so the project can be approved without trouble and delays.	Use the new agency to improve the area and its facilities such as grocery shops and kindergartens in Veddum. In general, it is advised that residents choose a kind of benefit that suits the local area best.	Keep supporting the incumbent firms as well as the new agency. Use the new agency as an advantage to maintain the existing agencies that already are in place by the capital brought in by the new agency. As in the case study where example the kindergarten where improved.

5. Discussion

The potential for success and failure of green energy projects are linked to geographical conditions.

In this section it will be discussed what the findings in the analysis contribute to, regarding what makes a location for green energy successful.

Locations are just coordinates on a map if they are not attached to a human value. and as such it is people that do things and people represented as agencies and actors that are the drivers behind whether the location of a green energy project on land being a success or a failure. The theory of path development has become useful to make sense of the different actors that has an importance to play when new agencies such as green energy agencies are introduced as a potential path addition.

As the analysis is structured into three phases to help understanding the processes in chronological order, it becomes clear that the different actors of the case study have different views and definitions on what facilitates a successful location of green energy. Specific geographical aspects are expressed through the different aspects the actors find important in supporting the placement site of the energy park in the case study. An example; Eurowind as a new firm needs geographical diversity as a green energy actor to increase its electricity output, but for others there may be a concern of shadowing at the same location.

In the phase where the energy park was an idea, my finding in this thesis suggests that it was important that Eurowind noted that different places have different industrial paths. Eurowind hired facilitating actors, anthropologists, to obtain an understanding of what the concerns of the residents and incumbent firms would in having a green energy park in their area. A constructive dialogue with residents and existing firms was beneficial for Eurowind, as this could prepare the firm for understanding what compromises it might have to make to get the acceptance of the green energy project. Further, Eurowind informed the residents that it intended to make a green energy project in Veddam and invited residents to participate in the process. This was done even before the project was announced to the municipality and the official hearing

processes began. Residents found this reassuring and it made them listen instead of protesting. The village association of Veddam decided to investigate whether there were any opportunities in an energy park for the community rather than just turning against it out of fears of possible negative consequences. Individual fringe actors, like the vice chair of the village association, were important in determining the public mood of the community towards the project. Contrary to the case of Veddam, in the neighboring village of Als, the incumbent tourism sector was unfavorable, and this turned the community against a green energy project. In Veddam, however, the incumbent firms went into the process in a pragmatic position.

In the phase of clarification, my interviews discovered, that an approach like the one of the village associations were important. Fringe actors, the residents along with the incumbent firms in the case study both were seeking solutions to minimize unfavorable consequences such as the issue of shadowing and to use land that is fit for prosperous agricultural benefit. Furthermore the incumbent firms could sell land that is agriculturally suboptimal for a favorable price and the residents made agreements that the village association is paid 160000 dkk.- per year directly from Eurowind A/S regardless of the income of the green energy park that year. These money are something that especially in the pop-up interviews was emphasized that it was important in winning over support among the sceptics in the community. The money can give the village association the possibility to exercise agencies that are important for a sustainable demographic development in the area. This benefit to the community combined with shares of the energy park directly sold to the households and favorable prices for land sold by incumbent firms has given incentives for the residents to support the location of the energy park, Veddam Kær. To acquisition of the land was a smooth process because it did not have much value for neither the residents nor the incumbent firms before the location for the energy park was proposed. It is considered important by this thesis that it was important for residents and old firms that the land was not of much value to the community before Energy Park Veddam Kær was established. Also compromises that led Eurowind to accept a less profitable outcome than the as “written on paper” ideal outcomes could be when a green energy project is

developed in theory. Compromises that seemed to have a huge significance in securing the support of incumbent firms and the residents. Especially the agreement on shadowing has played an important role. Using anthropologists as a facilitating actor, Eurowind got to know what concerns specifically to be aware of which gave a chance to prepare solutions in advance to the public hearings and meetings. Meetings, facilitated by another facilitating actor, namely municipal workers, constituted a professional framework that gave a positive framework for compromises. Further the policy makers participated in the public meetings to obtain an understanding of what the sentiment for green energy on the specific location was like, and if it would be in alignment with the wishes of residents and incumbent firms to politically approve the green energy park in Veddum Kær. Something giving proof that the meetings have brought positive results for successfully agreeing on a location for green energy.

Analyzed results in the path-addition phase, seemingly shows that residents in Veddum confirm that establishing green energy on the location in Veddum Kær has been overwhelmingly positive. This is because compromises on negative consequences where minimized such as shadowing has been carried out successfully. This along with satisfaction over the green energy project has become direct income for many households. The money directed to the village association to improve the area in general has been a specifically has made the case for keeping the support high in Veddum of green energy in Veddum Kær. Incumbent firms where active in finding a location that has no negative impact on the existing industrial path in the area. This thesis finds it important because it has led to the green energy park as a new agency that economically benefits the community without limiting already other existing economic activity. Overall, the residents are satisfied with the result, and it is important with a positive example to present when Eurowind A/S is launching new project proposals to other places. This is because as good results and satisfied residents in Veddum can inspire other cases. Thereby the successful location of green energy in Veddum Kær can reach beyond the case study. One aspect important to note though is that in Veddum it was found that people were satisfied with the current

project but warned against scaling up the energy park or creating another one due to it being too massive and disturbing.

6. Conclusion

By the end of the introduction chapter, I phrased the research question: “What facilitates successful localization of solar energy and wind turbines on land?”

Residents in the case study based on a case study and applied methods are mainly satisfied with the localization of the project after it is established, because of minimized negative impacts and the economic benefits being continuous. It is important that green energy projects remain popular among the residents for being successful in contributing to the localization of green energy. The reason behind this is that a positive case can work as an inspiration for other cases. Likewise, if the case does not remain popular or acceptable among residents, it can be a negative story that makes people sceptical of having green energy located close to themselves.

To remain being a successful display to other potential cases, it is found relevant to consider the size of an energy project in a place. If it becomes too big the support might turn into resistance. It is therefore advised by this thesis to make other projects in a modest size elsewhere, instead than making it too big somewhere.

It is important that a green energy new firm gets time to prepare for solutions to prevent eventual disagreements and potentially emerging disagreements with other actors. From the analysis this thesis is concluding that new firms by in advance involving scientific facilitating actors can be an aspect that brings success, when it comes to locating green energy. Open communication and early involvement of fringe actors and old firms are found important because it prevents concerns manifesting and instead maintain an open approach among those actors.

Also, later in the process the probability of success is improved by dialogue through meetings and hearings with a constructive and positive process is found important. The dialogue is found to benefit from professional public officials and scientific facilitating actors. An official frame for addressing issues will create a defined space for all actors to meet and have their points heard. Most notably it seems that the acceptance of residents towards green energy projects located in their proximity is by making the green energy profitable to the local community. Especially by direction

money towards a local group that can administer money on improving facilities in the area. Further, it generates support for a selected location by offering shares of solar and wind power projects directly to households nearby the proposed locations. The risk of resistance and a failed success can be decreased by a new firm's willingness to compromise the maximum potential profit of a green energy project, by minimizing the negative impacts on residents and incumbent firms. To further halt protests and instead successfully locating green energy in a location, it is found advisable that new green energy firms offer decent lump-sum payment to those negatively affected by a nearby green energy project. If incumbent firms are engaging constructively in the process, it is possible that a location for green energy can be found that do not become a disadvantage to the incumbent firms and the industrial path and economic activity in the area.

As it is hard to imagine Veddam Kær energy park alone can solve the climate crisis and energy supply issues, the case study conducted still has relevance as it contributes with relevant findings to what facilitates successful localization of solar panels and wind turbines on land. The relevance of the case study is reaching beyond Denmark as well as to places not affected by fluctuating energy prices as the energy Park in Veddam Kær was proposed and established before the Russian invasion of Ukraine. It has further relevance as green energy is an issue around the world regarding climate changes. Veddam Kær does have relevance.

The analysis shows a lot of actions can be facilitators for improving the probability of successfully locating green energy in a selected location. However, it has been displayed that the initiating phase also has a random element to it. A single fringe actor individual or old firm actor group can exercise its agency that determines if there is an initiating favorable atmosphere about making a success of locating green energy or the opposite is the case and regardless of what else has been done to improve the chance of probability, some proposed locations will eventually not result in a green energy project.

7. Reflections:

The thesis has aimed to investigate what facilitate a successful location of green energy.

In this section a reflection on the findings in the thesis will be presented.

7.1 Reflections on Methodology

The study has aimed to investigate what is successful location of green energy on land.

By interviewing selected key respondents, it was hoped to gain insight into the agencies exercised between actors in making a location of green energy successful.

The advantage of the in-depths interviews is that they gave a profound and deeper understanding of the case study. Another advantage related to the in-depth interviews is that they could help directing what documents to search for in the document analysis; This must be elaborated that statements from the interviews found interesting to analyze on can have their proofs strengthened or be questioned by articles and documents giving insight into experiences from others and from scientific documents. This strengthens the validity of the findings in the thesis.

The document-analysis also gave a general knowledge that made it possible to understand the field and give and insight into the field and its background in the introduction to the case study section in the analysis chapter. Many of those documents are not presented in this thesis, but they have made it possible for the author to ask relevant questions in interviews and find the right respondents. It has further made it possible to decide what is important on to be analyzed.

Arc-gis pro has also been used to visualize geographical context. It is hoped to make a better overview for the reader of the issues and topics of the green energy park. The buffer zone shows how the 5-kilometer zone gives Veddum but also a few other households a chance to buy shares in the distribution of the 20% of shares in the energy park.

7.2 Reflections on future research in the field of successful location of green energy

With the basis in this thesis, it would be interesting in future projects to investigate how the benefits for the local community can be structured. In Veddum the village association administrates freely a fixed amount per year. It will be interesting to investigate if there are different agreements that can be made which are fitting different local areas better. As an example, I recently came across a case in a village around 6 kilometers from where I grew up which have expensive natural gas as their primary heating source. Initially the residents were against wind turbines of 150 meters tall being established 4 kilometers from the village. The opinions started to change when the suggestion was made that if the village invested in heating pumps and applied for the national fund for district heating to subsidize tubes for a district heating electric heating pump station. The wind turbines could deliver electricity to the heating pump as a compensation. With that as an inspiration it could be interesting to make a project on location of how green energy projects on land can help solve place bound local problems. Doreen Massey a geographer known for among other things to write in a feminist geographic way could be interesting to bring in as a philosophical background relating to how her “global sense of place” argues places are results of human actions and that technological changes and global events can change people’s perception of what a place should be like. (Massey, 2008).

The answer to the research question is to a large extent based on a case study in Denmark a country with long lasting democratic traditions and civil organizational associations.

For future projects investigating the issue further it would be relevant to investigate how the residents and fringe actors’ options for organization in cases of locating green energy in other countries with different traditions for civil- and political organization will be expected to play a role, like the village association and municipal role did in a Danish case. This is relevant for the residents living in these areas as well as for support and thereby the probability that more green energy is established on land and in other regions and countries.

The focus of the case study and the focus on the project of the thesis is mainly focused on the actors directly involved including new firms, incumbent firms, and fringe actors. Other future projects could focus more detailed on what facilitating actors such as municipal workers and policy making actors can contribute to make location of green energy successful. Also, it would be interesting in that regard to make a study on if policymaking actors and municipal facilitating actors can share experience to politicians and officials in other countries where the municipality does not play an active role in the process of finding common ground between residents and companies in localizing green energy.

Another direction that would be interesting to investigate further is a deeper understanding of the current situation by conducting a literature study. This would be an advantage because to have a deeper understanding of the experience with energy agencies and to contextualize the current situation more in detail to analyze how perceptions of green energy has changed over time and what the patterns of success and failure has been historically.

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