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What socioeconomic dynamics will offshore wind affect?

A regional case study of Utsira North.

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**Master in Energy, Environment, and Society**

## Foreword

This thesis marks the end of two educational years at the University of Stavanger, where I studied for a master's in Energy, Environment, and Society. Due to the Covid-19 pandemic, much of the studying the two recent years has taken place at home. The thesis is written in the spring of 2022 and is equivalent to 30 credits.

The pandemic has not directly affected my thesis, but like for most people, two years of social distancing and several lockdowns have been challenging. Therefore, I want to thank my family and friends for supporting and encouraging me through my studies. I especially want to thank my supervisor, Thomas Michael Sattich, for guiding me and contributing constructive criticism along the way in my writing of the thesis. Further, I would like to thank the participants for my interviews, who have been the primary data in this thesis; I would not achieve the same results without them.

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Solveig Elisabeth Gjersvik Tjøsvoll

## Abstract

The development of onshore wind farms in Norway has been met with criticism from different stakeholders and has made it difficult to plan for further extensions of onshore wind. Also, it is stated that Norway has a lead in offshore wind technology due to its experience in the oil and gas industry. In 2020 the Ministry of Petroleum and Energy declared the two areas of Utsira North and Southern North Sea II open for offshore wind. Although the work of offshore wind has been ongoing since 2006, offshore wind is in the beginning in Norway. In 2012, a risk assessment was conducted for different areas in Norway, but little focus was on socioeconomics. This paper aims to investigate the area of Utsira North by looking into the potential socio-economic dynamics that may be affected by the establishment. During the study, the research also investigates what is affecting the time of this development.

Starting off the research, it seemed evident to do a case study and start talking to shareholders and stakeholders in the region of Haugaland. The first impression from reading national news was that there is a social resistance to offshore wind. It was portrayed as if this social resistance was delaying the process of offshore wind in Norway. For this thesis, over twenty interviews were conducted, some more low-key than others. However, after doing a couple of interviews, the impression was rather the opposite; the local stakeholders of Utsira North seemed to be more than ready for the wind park to be developed. The socioeconomic effect on the region in the eyes of many stakeholders was positive, with high economic influence on the region contributing to more industry and working places. Of course, some of the interviewees were skeptical, but overall, the general opinion was very optimistic. Thereby, the research took a turn; if there was a social acceptance, what was delaying the development process of Utsira North.

Introducing a new level of the research, the interviewees had to enter another level as well by starting to reach out to policymakers in the government and governmental institutions. Considering the limited time of the thesis and lack of network in governmental institutions, it was a real challenge to get access. However, with some information from primary data and digging into secondary data, the thesis manages to point out some crucial factors. The results

suggest a lack of institutional framework on how to proceed with the development of large-scale offshore wind parks in Norway. In the case of Utsira North, the socioeconomic consequences are mainly seen as positive; the region is patiently waiting for the development to start.

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# 1. Introduction

Nation leaders from all over the world have convened, on several occasions, to prepare for a green transition and to reduce pollution; the primary challenge appears to be replacing non-renewable resources with renewable resources. The Paris Agreement in 2015 aims to establish a framework for limiting global warming to well below 2 degrees Celsius. One of the most critical components in achieving this goal is to replace non-renewable energy sources with renewable energy sources (United Nations, 2015). In the fall of 2021, world leaders met once more at COP26 to discuss climate and agree on how to face the environmental changes. The primary priority was concluded to be on how to decrease and eventually stop fossil fuel production (Smith et al., 2021).

Compared to other European countries, Norway has been relatively slow in developing wind farms as a renewable energy source and has failed to engage the population (Olsen, 2017). During COP26, the Norwegian prime minister Støre held a speech claiming the Norwegian Oil Fund to be the new climate leader, investing in renewables (Solvang, 2021). This statement was the reason why Norway was given the price of “Fossil of the Day by The Climate Action Network (Nilsen, 2021). Given the outcome of the COP26, it may appear evident that Norway will need to accelerate the development of more renewable energy sources to meet the expectations of other nations. What is affecting the slow speed of the development of renewable energy sources in Norway? There is substantial opposition and engagement against wind farms, but according to statistics, offshore wind faces fewer barriers compared to onshore wind in Norway (Gregersen & Tvinnereim, 2019). Also, Norway has the advantage of relevant technology used in the petroleum sector (van den Burg et al., 2017). Wind farms are an important element of the green transition's new energy sources, and social acceptance appears to be critical for successful development.

There are some small-scale projects of offshore wind in the Norwegian North Sea, but in 2020 it was announced that “Utsira North” and “Southern North Sea II” were confirmed to be opened to develop large-scale wind farms. In contrast to the Southern North Sea II, Utsira North is close to shore and has deep water; therefore, the installations will be floating (Utsira



Kommune, n.d.-a). Utsira North is an area of 1010 square kilometers and was opened for applying for concessions from the 1<sup>st</sup> of January 2021 (Olje- og energidepartementet, 2020). Utsira North is located on the West Coast of Norway, Rogaland, about seven kilometers from Utsira and twenty kilometers from the mainland Haugalandet (NVE, 2018b; Utsira Kommune, n.d.-a). Historically, Haugalandet, especially Utsira, Karmøy, and Haugesund, were strong fishery communities, something that has decreased in the last century. Today, the primary income for these municipalities is heavy industries and shipping, but still, it is a society close to the sea and with strong relations to offshore activities (Thorsnæs, 2021). Installing a large-scale floating wind farm this close to shore will somehow affect this region, both socially and economically. I would like to investigate the case of Utsira North in this thesis as a test case to see if socioeconomics plays any role in the progression of the development.

The process of offshore wind in Norway has been ongoing for years now. According to NVE (2022), it started in 2006 as Norway declared that a strategy for energy production offshore should be made. In 2010 a law for offshore wind was announced, and in 2012 NVE conducted an impact assessment of areas in Norway suitable for offshore wind (NVE, 2022). The impact assessment from 2012 was also confirmed in 2018 with the same outcome, namely that Utsira North and Southern North Sea II were appropriate areas for offshore wind (NVE, 2022). In June 2020, the government opened applying for licenses (Olje- og energidepartementet, 2020). The progress of approving the license takes time, as the Norwegian Government would like to ensure all parts are heard. Therefore the government of Solberg 2020 opened a forum for stakeholders that held one meeting before the government resigned in 2021 (Olje- og energidepartementet, 2020). The new Government of Støre, installed in October 2021, has not continued the work of the stakeholder's forum so far (Regjeringen, 2022). No approval for any license has been given yet, and developers are getting impatient and worried that Norway will not act in time.

It is evident that Norway is slow in its development of offshore wind compared to other countries. Despite that Norway has available technology and statics show that there are fewer barriers to offshore wind than onshore wind in Norway the progression is slow (Gregersen & Tvinnereim, 2019; van den Burg et al., 2017). There have been conducted risk assessments, but

there has been little focus on socioeconomic circumstances. Considering Utsira North is planned close to shore it is important to understand the socioeconomic dimensions of the offshore wind park. Utsira North is an interesting test case to see if there are any socioeconomic conflicts affecting the slow speed of development. So, in what way will Utsira North affect the local region and are there potential conflicts affecting the time delay for the licenses.

## 1.1 Research questions

The theme of offshore wind can be seen from many different perspectives. In this thesis what I would like to investigate is if an offshore wind park close to shore, such as Utsira North, has any socioeconomic effects on the local region. Further, if there are any potential consequences that are affecting the speed of the development of offshore wind in Norway. Utsira North is at an early stage of its development, with companies and local stakeholders discussing specific development options. I assume that the dynamics between local stakeholders may be affected in some form by the prospects of the wind park. Therefore, I aim to map the ongoing situation with the several parties affected and evaluate the socioeconomic dynamics could be. On that basis, I want to evaluate what the consequences of social acceptance are. Finally, I want to find out how all this shapes the final implementation of the wind park. From this, I have established the research question:

“What socioeconomic dynamics will offshore wind affect? A regional case study of Utsira North.”

Out from this, I have established three sub-questions to guide my research further:

1. What different actors' groups are, or will be, involved, and what is their stance on Utsira North?
2. In what way does the development of Utsira North relates to social acceptance?
3. What is effectively affecting the speed of the development of the wind farm?

I find it important to state who different potential actors are or to what degree different actors are involved in the development. The economic impact may be related to whom these

actors would be and if these economic goods may impact the region, and the socioeconomic circumstances. For determining the socioeconomic aspects, the social acceptance occurred relevant understanding. This is to see if these are correlating factors as wind power is a topic with an ambivalent stance for many. Lastly, what is affecting the time of the development as the process of offshore wind in Norway has been ongoing for years now, are there any hidden obstacles to the development.

## 1.2 Structure of the study

The first chapter presents an introduction to the thesis. Further, the research questions of the thesis are represented as the purpose of the thesis. Chapter two it is conducted a literature review with relevant articles on wind power, here also examples from onshore wind are represented due to the low updated material in offshore wind. The literature review focuses on cases in Europe, with a few exceptions, as this seems most relevant to the case of Utsira North. This will also be relevant for the discussion in chapter seven. The third chapter presents three theories that are relevant for understanding transitions and policy. The fourth chapter is called background information and gives a throughout description of Utsira North and its region. This information is important for understanding the underlying social circumstances and will be relevant when the findings are represented in chapter six. Chapter five is the methodology chapter where the methodology used is described and what choices have been made, analysis of data, findings, and as well as the limitations of the thesis. In the sixth chapter, the findings are summarized and categorized further with help from the research questions. Thereafter in chapter seven, relevant theory is discussed together with my findings before the results are represented in chapter eight. Finally, the conclusion and suggestion for further research is demonstrated in chapter nine.

## 2. Literature review

The literature review aims to review relevant papers that may introduce the field and what today's challenges are in wind planning. Although there is little research done on the socioeconomic aspect of offshore wind, there are several papers investigating the circumstances

onshore. The papers evaluated in this review are focusing on western European countries, with a few exceptions, and their social acceptance, policy, and economic aspect of wind energy. This is due to events concerning wind power from other countries in Europe that can be relatable to the development in Norway. Scandinavian countries may have comparable similarities to what issues there are in Norway. The review is divided into three main categories: social acceptance, socioeconomics, and political regulations, as these seem to be some of the main factors that affect wind development. It appears that social acceptance and policy are strongly related and influence each other. Although a lot of the literature refers to onshore wind power in other countries than Norway, it may occur relevant to offshore wind as well, especially regarding the case of Utsira North, due to the short distance to shore. I have conducted scientific articles found on Google Scholar and Oria for the literature review.

## 2.1 Social acceptance

In Sweden, an analysis by Bjärstig et al. (2022) has been done of how wind power has been portrayed in the media. The research is demonstrating how politicians and providing actors of wind power claim wind farms to be the solution, while individuals claim wind power to be a problem (Bjärstig et al., 2022). It is shown that the public often is against wind power but at the same time, not being heard leads to a low impact on policy, while NGOs and wind power developers have an impact on wind power policy (Liljenfeldt, 2015; Vasstrøm & Lysgård, 2021). The debate usually concerns the localization of the large-scale wind farms, where socio-political aspects often are neglected, and the concerns of nature or biodiversity of the geographical area are the priority (Bjärstig et al., 2022). The study of Sweden shows that the media has developed the recent years to portray wind power more as a solution to the energy problem. At the same time, it shows that depending on who is posing the issue, wind energy is framed as positive or ineffective. Bjärstig et al. (2022) underline it as a conclusion that different small local actors should be convinced by the benefits for the society and environment, not only local politicians. This may be necessary to successfully establish large-scale wind farms and avoid conflicts (Bjärstig et al., 2022). The study of Bjärstig et al. (2022) confirms some of my first impressions when reading newspapers that the media presents a social resistance against wind farms.

A case study by Aitken et al. (2020), done in the UK, examines what influence the resistance group has on the development of wind parks. Aitken et al. (2020) find that the local objectors in Scotland did not have any influence on the development of wind power. However, the wind power resistance group could delay the development, but not affect the outcome. Further Aitken et al. underline that the developer's approval was delayed due to objections which cost the developers a significant of time and money. The resistance group could be accused of using covert power to ensure negative consequences for the developers as well as negative publicity about the development and wind power in general (Aitken et al., 2008). This study by Aitken et al. shows that even though the resistance groups have little power over the development it influences the public impression of wind power.

In a study from the US by Sokoloski et al. (2018), it is found that the social resistance may not be as great as the public believes. They found that both opponents and supporters overestimated the resistance of the offshore wind. And that these perceptions affect the public discourse on offshore wind, but are not necessarily what reflects the reality of the society (Sokoloski et al., 2018). They suggest that their findings could be a contribution to developing a political procedure that more effectively and accurately includes public feedback in the development process. Further, this may affect allowing a broader variety of perspectives to be heard by decision-makers and the public, with significant downstream effects on how developers and policymakers approach involves various stakeholders in the future. Policymakers have an important role in how the public discourse is portrayed (Sokoloski et al., 2018).

In Norway onshore wind power has experienced a high degree of resistance (Olsen, 2017). The most typical causes for opposition to wind farms are noise and environmental invasion; the local government often supports the local community; however, statistics suggest that these resistances are not enough, and wind farms are usually established despite these factors (Olsen, 2017). In Northern Norway, there has been a heated debate about onshore wind in areas where reindeer have a long history of husbandry as windmills in these areas will harm their grazing grass (Naturvernforbundet, 2020). Øyfjellet, Norway's second-largest wind farm, is one of the examples where wind farms have damaged reindeer husbandry, a case that has

received a lot of attention and has gone all the way to the Supreme Court (Strøm, 2021). The license was invalid due to a dispute between the wind farm and Sami reindeer husbandry rights, it is unknown what effect this will have on other existing onshore wind farms on Norwegian property (Strøm, 2021). The case of Øyfjellet may highlight the concern that local stakeholders are not heard, and as Olsen (2017) finds that wind farms are developed despite stakeholders' resistance. In 2019 NVE proposed a national framework for further development of onshore wind power with the aim to reduce conflict (NVE, 2021). The Norwegian government considered the framework when evaluating the establishment of 13 additional locations for land-based wind farms, but the development was put on hold due to widespread opposition (NVE, 2021). The allocating of offshore wind licenses may have less social resistance than onshore wind power in Norway as Gregersen and Tvinnereim (2019) determine. Still, there are several stakeholders and industries to consider concerning offshore wind as well, despite this NVE has not prepared a national framework for offshore wind yet.

## 2.2 Socioeconomics

A recent study by Glasson et al. that will be published in July 2022 does examine the local socioeconomic impacts of offshore wind and highlights that there is very little attention to this compared to marine life and birds. Glasson et al. (2022) define a socioeconomic impact assessment as follows; “*Socio-economic impact assessment (SEIA) seeks to identify impacts of development actions on people, and who benefits and who loses; it supports the inclusion of the needs and voices of diverse community groups in project planning and decision-making*” (Glasson. Et al., p.19). The study further states that there is potential employment during the construction period, but there is little research on what impact this has on society. At the same time, they acknowledge that the offshore wind projects are often far from shore, and therefore the socioeconomics relevance for the developers is less important (Glasson et al., 2022). Further, they underline that there has been a great focus in the UK on how the life-cycle of the wind park can potentially give broader employment, though not necessarily to the local region, contrary to Europe, where the main focus has been tourism, commercial fishing, and shipping. Glasson et al. determine the importance of ensuring national or local suppliers in the supply chain for the development of wind parks by referring to how this has been done in the allocation

in Scotland. The study's conclusion underlines that there is a clear focus on the economic impacts throughout the development and somewhat varying attention to social impact and that it is important to monitor the actual socio-economic impacts. Inadequate monitoring can obscure the differences between predicted and actual impacts (Glasson et al., 2022).

Alem et al. (2020) determine that wind farm construction, operation, maintenance, and decommissioning can have both positive and negative socioeconomic consequences for the surrounding area. Wind farms have significant economic and social consequences for the community. As a result, they have the potential to generate both beneficial and long-term outcomes. However, the study reveals that there is a paucity of evidence suggesting how the projects will perform over time on these parameters. Therefore, projects should be monitored after completion to track socioeconomic impacts and compare them to assumptions and projections made prior to construction (Alem et al., 2020). Further Alem et al. found that negative effects on tourism and house pricing decrease when the wind parks are placed forty kilometers or further from shore. Finally, they emphasize that the scientific proof for the socioeconomic effects of offshore wind turbine electrical infrastructure is scant or non-existent and needs to be studied on further (Alem et al., 2020).

### 2.3 Political regulations

Denmark is known for its high degree of acceptance of wind energy in the civil population, which was an outcome of the policy package introduced in 2008 (Jørgensen, 2020). The package included three schemes to promote local acceptance through financial support, both direct support to affected individuals and communities (Jørgensen, 2020). Still, the research by Jørgensen (2020) concludes that the Danish scheme failed to stimulate social acceptance through these initiatives. His research focuses on the green scheme that was implementing goods for the local community, where the inhabitants in the community felt neglected. A comparative case study of the Netherland, Denmark, and Finland has another approach; the study shows that Denmark's political energy initiatives have enabled social acceptance (Oteman et al., 2014). But, at the same time, the study underlines that as the energy projects have scaled up, the less the local communities are involved. Finally, Oteman et al.

conclude that the political initiatives of energy subsystems both may strengthen and constrain energy projects. Further, they underline the importance of dialog between involved actors and government levels to be crucial for a successful system where locals can engage (Oteman et al., 2014).

The EU's members and other nations are planning to increase power from renewable energy sources, affecting national planning. Planning for wind farms often conflicts with national planning development (Liljenfeldt, 2015). Liljenfeldt (2015) investigates how the legislation of the EU affects the local planning in Finland, Norway, and Sweden. Liljenfeldt's findings indicate that there has been increased focus on cooperation and including stakeholders when planning new energy sources. At the same time, Liljenfeldt also uncovered that the national authorities are under the time pressure that the more effective top-down methods for planning have been favored along the way of making decisions of wind farms (Liljenfeldt, 2015).

Concerning offshore wind planning, Multi-use Spatial Planning is a solution to decrease the implications of offshore wind farms while trying to maximize the advantages. In the Netherlands, the "Community of Practice North Sea", has been established to ensure different stakeholders are heard with the aim to create a marine multi-use of areas provided for offshore wind (Steins et al., 2021). Steins et al. (2021), underline that multi-use Spatial Planning requires the active involvement of all stakeholders. The study suggests that Communities of Practice can be useful for encouraging collaboration between stakeholders related to marine multi-use in an informal setting. The community of practice provides a positive learning environment disconnected from political practices, where the focus is practical challenges and establishing working relationships (Steins et al., 2021).

Wieczorek et al. (2013) did a review of the European offshore wind innovation system. The countries included were Denmark, the UK, Netherlands, and Germany. The study proclaimed several challenges in the offshore wind sector among policy fragmentation and poor adaption of national regulations and laws and the limited grid infrastructure. Further, it suggests that instead of a national individual perspective on the offshore wind industry it would be



beneficial to adopt a more holistic European approach to ensure a uniform grid strategy. It is not only the technical barriers concerning the grid capacity but there are several institutional obstacles that will need regulations at a European level (Wieczorek et al., 2013).

In Norway, NVE has become the head of decision-making with the aim of efficiency, which leaves local development plans obsolete (Liljenfeldt, 2015). As Liljenfeldt determined, Norwegian policy has been affected by the new energy sources. Vasstrøm and Lysgård (2021) have investigated factors that impact the Norwegian wind power policy regarding onshore planning. Their study demonstrates that business-minded developers and interest organizations strongly influence energy policy in Norway. In Norway, there has been a low degree of social acceptance, which arises the question of energy justice (Vasstrøm & Lysgård, 2021). Vasstrøm and Lysgård further state that it has been suggested to ensure equitable distribution of the economic advantages in the areas of wind farms to increase energy justice, but the Norwegian government claims that wind energy is too vulnerable yet to impose additional taxes. During these political circumstances, the wind farms have not experienced challenges in an open market, which does not consider that socioeconomic conditions may change over time (Vasstrøm & Lysgård, 2021). The study by Vasstrøm and Lysgård highlights that what has influenced the Norwegian energy policy of wind farms is the developers.

The petroleum industry has strong relations to the political context in a nation such as Norway and has a significant impact on offshore wind. The technology used for oil platforms is also very relevant for offshore wind. In Norway, the price fluctuations of oil and gas resulted in variable offshore wind participation (van der Loos et al., 2021). Offshore wind developers in Norway can be traced back to petroleum companies and industrial companies. Norwegian oil and gas division of Norwegian Hydro and Statoil merged in 2007 and started developing demos. In 2008 Statoil was given a license to its first offshore wind park in the UK, which also Statoil raised expectations for further expansion in the offshore wind (Mäkitie et al., 2019). In the following years, from 2011 to 2014 Mäkitie et al. call the stagnation phase, before there occurs further engagement from 2015 and further. This engagement is strongly related to the fluctuated oil and gas prices and determines how much influence the big actors have on R&D. Still the study by van der Loos et al. (2021) concludes that the political circumstances in their case

studied, Norway and the Netherlands, are the critical gatekeeper of development. Their study refers to the several events done by the incumbent government has major effects on how the further development will be, and their focus on climate policy (van der Loos et al., 2021).

The literature review demonstrates how complicated the energy debate is and how energy policy is continually changing. Even though many of the papers referred to in this review concern onshore wind farm planning, the information may also be relevant to offshore planning. As mentioned, there is little research yet on offshore wind planning and in what way it may affect regional actors in a long run. This may be related to the fact that large-scale farms are still relatively new, and the long-term impacts are still unknown. There seems to be a lack of literature concerning the socioeconomic consequences of offshore wind farms, especially for wind farms close to shore such as Utsira North. Therefore, this thesis will aim to map the different parties in the region that may be affected by the wind farm of Utsira North. Further how it will affect socioeconomic dynamics and how this affects the implementation of the wind farm. As a result, I hope that this thesis may be a contribution to the field.

### 3. Theory

As seen in the literature review policy and the political regulations has an important influence on the development of offshore wind. Further, in the next chapter of background information, the different Norwegian government institutions are elaborated on and may demonstrate how they work as gatekeepers to what degree actors are involved in the development. To better understand the role of social acceptance, policy and how policy work I will in this chapter present three theories, the Multi-Level Perspective, the Triangle of Social Acceptance and the Multiple Streams Approach.

#### 3.1 The Multi-Level Perspective

To further understand what role of political regulations, the Multi-Level Perspective by Geels (2002) is introduced. The Multi-Level Perspective by Geels (2002) demonstrates what dynamics that are affecting the transitions of socio-technical transitions. Figure 1 shows the

three layers of; Landscape developments, Sociotechnical regimes, and Technological niches, that the Multi-Level Perspective consists of. The figure also illustrates how the MLP works in simple terms, by demonstrating how pressure from the regime or technical landscape affects innovation, as well as the other way around which affects a “window of opportunity” where the new technology becomes a part of the landscape. Geels (2014) introduces policy to the MLP and acknowledges the strong relationship between business and policy and how this collaboration affects potential transitions. In the case of offshore wind in Norway, this influence between policy and industries such as oil and gas seem to be accurate. Policy, power, and economy are strongly related factors that influence transition and that can mobilize to resist changes (Geels, 2014). As figure 1, illustrate there are multiple levels where different actors can be placed, but Geels (2014) acknowledges that the levels are much more influenced by political circumstances than what his former research proposed.

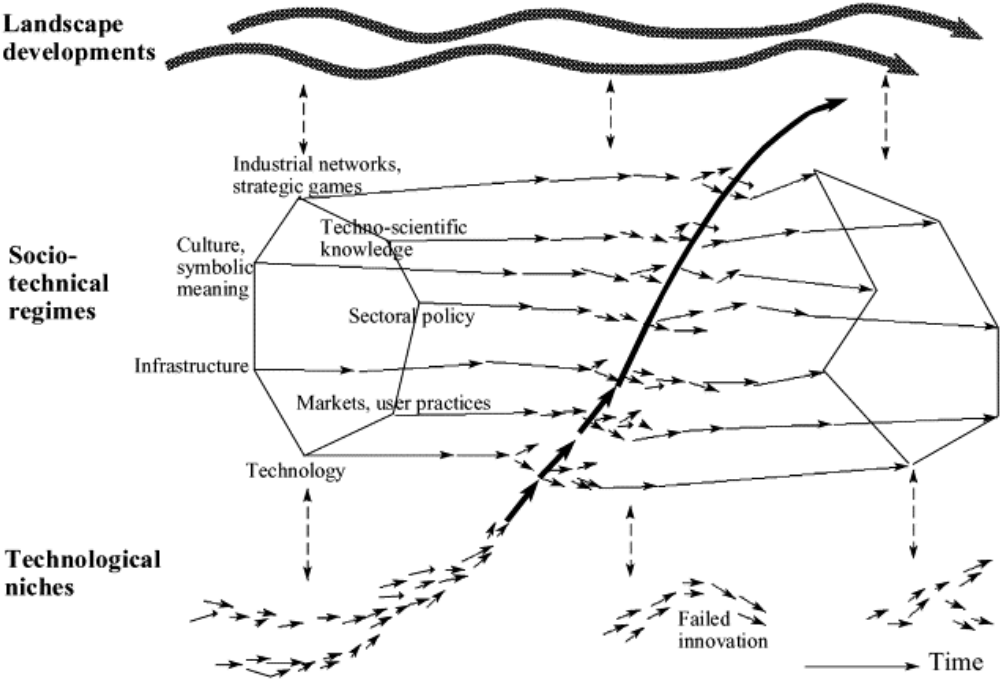


Figure 1: Picture of the MLP. (Geels, 2002)

### 3.2 The Triangle Of Social Acceptance

Wüstenhagen et al. (2007) state that social acceptance of wind energy has been neglected from early in the eighties when the policy programs first began. The phrase social acceptance itself is also widely used and often without any specific definition. Therefore Wüstenhagen et al. (2007) present the triangle of social acceptance that includes different dimensions of social acceptance consisting of socio-political acceptance, community acceptance, and market acceptance. The triangle demonstrates how these three dimensions are related and that even though there may be one investor and one developer, there are several stakeholders involved or affected at a regional and national level (Wüstenhagen et al., 2007)



*Figure 2: The Triangle of social acceptance of renewable energy innovation (Wüstenhagen et al. (2007))*

Socio-political acceptance is the most general form of acceptance. In many countries, the general level of acceptance of renewable energy technologies and policies is high, which has led to politicians' perception that social acceptance is not a problem. However, when moving

from a national level to a local level where the actual investments and decision has to be made, the problems occur (Wüstenhagen et al., 2007). Still, the socio-political acceptance plays an essential role in establishing relations with industries and politics in favor of wind power that can develop financial frameworks and spatial planning promoting wind power (Wüstenhagen et al., 2007)

Community acceptance involves local acceptance by the local government and the residents in the area (Wüstenhagen et al., 2007). When it comes to community acceptance, Wüstenhagen et al. (2007) acknowledge that science disagrees. While the phrase “not in my backyard” has often proven that community acceptance is low, others find that acceptance is low during the development but increases during the operation time. Therefore, the time dimension is crucial in community acceptance, further that the experiences of the development are fair and transparent (Wüstenhagen et al., 2007). Finally, is the market acceptance that may be transferred to markets' willingness to adopt innovation. This can be influenced by green marketing that makes the user choose greener substitutes that can replace today's solutions (Wüstenhagen et al., 2007). This also brings challenges, as wind power requires huge areas as the demand for renewable energy increases, thereby development does not necessarily increase social acceptance as it interrupts the environment. Market acceptance also includes investors' and companies' willingness to energy innovation, internal social acceptance in these firms is therefore essential (Wüstenhagen et al. 2007).

The triangle demonstrates how all three factors strongly relate in a dynamic way. Market and socio-political acceptance do strongly affect each other due to influential stakeholders and networks in business and policy, therefore social acceptance is essential to work on in several countries (Wüstenhagen et al, 2007).

### 3.3 Multiple Stream Approach

Another approach to enrichen the understanding of political regulations and their effect on transition is the Multiple Stream Approach. In a study of shore power in Oslo, by Bjerkan and Seter (2021), the MSA is conducted to analyze the policy and politics in the energy

transition. The MSA is a model for understanding policy trends by looking into the politics stream, policy stream, and problem stream (Perry & Kingdon, 1985). In Oslo, the problem stream consisted of issues relating to the environment. It had been discussed for ten years before the shore power was installed, but this makes the problems come on the political agenda (Bjerkan & Seter, 2021). The policy stream in the case of Oslo became a collaboration of the port's users and political regulations that ensured low costs with tremendous outcomes that also affected public acceptance, and thereby shore power became a superior policy (Bjerkan & Seter, 2021).

The last stream is the political stream. The political influence on the transition of shore power can be several (Bjerkan & Seter, 2021). Bjerkan and Seter (2021) state how the outcome of the local government election led to more focus on green policy and that the administrative work of the local government influenced pressure on onshore power. Also, two significant events that affected the political stream were the pressure from environmental NGOs, such as Bellona and Zero, which also were in contact with the port's users, and the second event was how local energy companies were involved, which allowed them to engage in innovation and new business (Bjerkan & Seter, 2021). Bjerkan and Seter (2021) found that shore power was successfully implemented due to a need for the solution, and few other policies were solving the problems; therefore, the policy of shore power became unanimous and ambitious for decreasing climate emissions. Lastly, the political shift in the local government created a framework to support an uncontroversial approach (Bjerkan & Seter, 2021).

#### 4. Background information

The background information will provide information about the progress of Utsira North, the region investigated, and the different stakeholders that have been relevant to this thesis. Some of these stakeholders have been interviewed and are the primary data source in this thesis which will be presented in the next chapter. Therefore, I found it reasonable to give a thorough examination by conducting secondary data on how they relate to the case of Utsira North and what makes them interesting. Firstly, I will introduce Utsira North and the progress of the wind park, further, the region is presented, as the fishing history and industrial development are

important factors of this case study. And lastly, different stakeholders are introduced and compared to existing literature.

### 4.1 Utsira North

Utsira North was one of fifteen areas at sea in Norway investigated in 2012 for offshore wind. The impact assessment of 2012 showed that Utsira North was suitable for floating wind and had great potential for wind energy without too much impact on the environment (NVE, 2018a). One of the benefits of Utsira North being close to shore, about seven kilometers from the island Utsira, are that the cost of maintenance decreases (Utsira Kommune, n.d.-a). It is more accessible access to the grid on the mainland and therefore makes the economic cost of the wind farm in total decrease (Berg et al., 2012). In 2018 NVE was asked to investigate if there had been any changes in the impact assessment from 2012, where the outcome of Utsira North remained the same, except that the cost of offshore wind had decreased (NVE, 2018a).

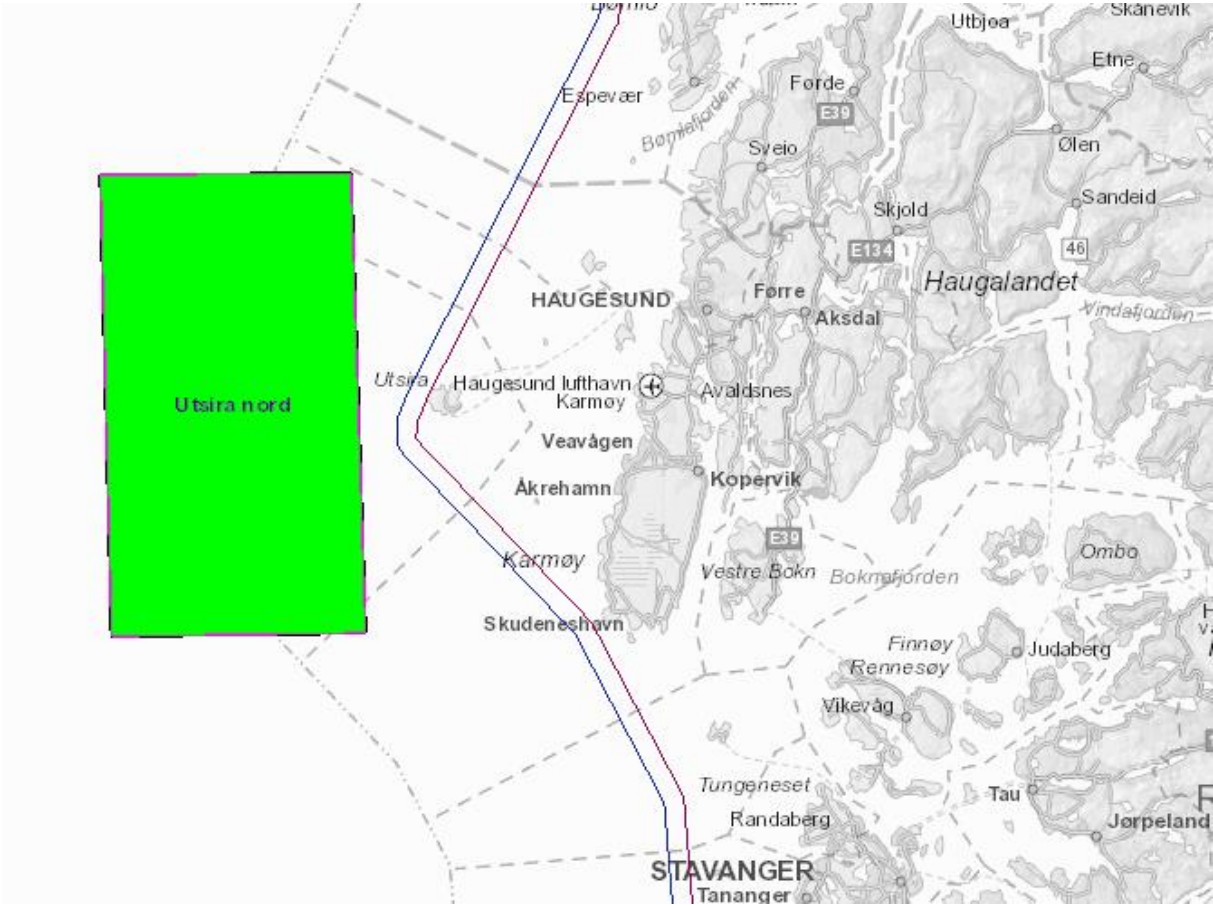


Figure 3: Picture of Utsira North. (NVE Temakart n.d.)

In June 2020, it was settled by the government that the area of Utsira North, consisting of 1010 square kilometers, would be open for applying for a license from the 1<sup>st</sup> of January 2021 (Olje- og energidepartementet, 2020). So far it is planned for at least three projects at Utsira North that will result in 500 MW, despite that Statnett confirms that there is a grid capacity of 1500 MW at Haugalandet (Olje- og energidepartementet, 2021b; Statnett, n.d.). There have not been approved licenses of Utsira North yet, and there is no official number of whom have applied. There is being prepared a quality guide these days that several of the developers are waiting for to be published before they apply. In a press release by the Ministry of Petroleum and Energy, they declare that the government wishes to establish a solid framework and law before developers may start (Olje- og energidepartementet, 2021b). In the same press release, the government also states that they aim to ensure that the cost of connecting offshore energy to the grid will be paid by the developers and not the paying customers. Further, they appoint Statnett as responsible for developing a grid system at sea. Statnett states on its website that it will not proceed until the authorities have finished distributing licenses (Statnett, n.d.). The same year, 2021, “The law of offshore energy” was implemented as a law for renewable energy production at sea with the following guide for license applications and criteria (Olje- og energidepartementet, 2021d). Below I have illustrated important events since 2006 related to Utsira North. The events in the timeline have been gathered from MPE and NVE (NVE, 2022; Olje- og energidepartementet, 2020).



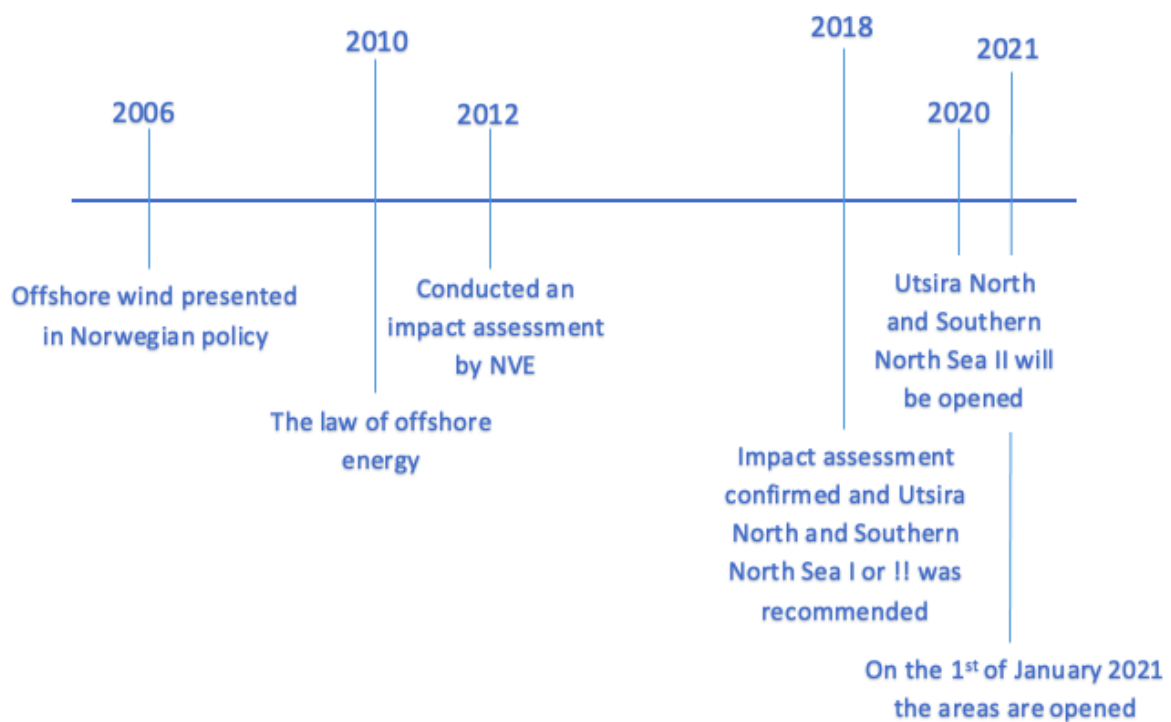


Figure 4: Timeline

#### 4.1.1 Governmental institutions

There are several governmental institutions involved in the development of offshore wind in Norway, where there has been done a lot of preparatory work during the last years. NVE has already been mentioned several times and stands for Norwegian Water Resources and Energy Directorate. The Norwegian Water Resources and Energy Directorate is responsible for managing the country's water and energy resources and reports to the Ministry of Petroleum and Energy (NVE, n.d.). The Ministry of Petroleum and Energy (MPE) has the authority to grant licenses for offshore energy facilities. Applications will also be delivered to the MPE. NVE will provide professional advice to the MPE during the licensing process, and NVE has the authority to approve detailed plans. The Law of Energy applies to offshore wind turbines that are planned within the baseline. The Law of Marine Energy applies to facilities that are planned outside of the baseline. The Marine Energy Law was passed on the twelfth of June, 2020, and the government simultaneously opened the two areas of Utsira North and Southern North Sea II for the development of marine energy facilities in Norway (NVE, 2022).

The Norwegian Coastal Administration (NCA) is a national transport agency that is responsible for coastal management, maritime security, and emergency response to acute pollution (Kystverket, n.d.). The NCA is a part of the Ministry of Trade, Industry, and Fisheries. In 2021 they did a risk assessment of Utsira North concerning marine traffic the results show that if maintaining today's situation there would be an increase of accidents by 26 percent due to Utsira North. Thereby there are made two scenarios where areas of the planned wind park will be reserved for marine traffic which will reduce the likelihood of accidents even more. Further NCA states that this risk assessment does not include contact damage between ship and wind installations, those assessments are the responsibility of the developers (Skarbø A. et al., 2021).

## 4.2 The region

Utsira North will be found about seven kilometers from the island and municipality Utsira (Utsira Kommune, n.d.-a). The municipality has the smallest population in Norway and is the second smallest in terms of area. Utsira is located in the North Sea outside of Karmøy and Haugesund, about eighteen kilometers from Haugesund, where the ferry to Utsira has its shore (Utsira Kommune, n.d.-b). Utsira has a unique history of renewable energy by being the first host of two wind and hydro plants to give electricity to ten households on the island. The municipality aims to be a living laboratory of renewable energy projects with the slogan "Utsira provides energy" (Utsira Kommune, n.d.-a). The region near by Utsira is called Haugaland, where the municipalities of Utsira, Karmøy, Haugesund, Tysvær, Bokn, and Vindafjord are all known by this designation (Thorsnæs, 2021). The focus of this thesis will be Utsira, Karmøy, and Haugesund, as these are the actors closest to Utsira North. Still, the other municipalities will also be brought up on occasions.

The municipalities in the region are collaborating through Haugaland Growth. Haugaland Growth has been established with the aim of being a cooperation portal for the different municipalities and their business interests. The organization is an Inter-Municipal Corporation owned by ten municipalities and Rogaland county. Haugaland Growth has its main activities concerning; increased interaction, attractiveness, and value creation for the region (Haugaland

Vekst, n.d.). In 2020 Haugaland Growth ordered an analysis of what ripple effect Utsira North could have on the region by Menon economics. The analysis shows that during the establishment of Utsira North, six thousand five hundred new employees will be needed in Norway, and financial value creation for about thirteen and a half billion Norwegian kroner. In a scenario, with a low import of goods, these numbers could increase even more. Further, it is speculated that about 200 persons would be working with the annual operations of the wind park (Erraia et al., 2020).

Historically, Utsira, like the rest of Haugaland, was a fishing community where herring fishing was the primary work from the eighteen century to the mid-nineteenth century. According to “Norwegian History” (2018) Haugesund city was established due to the high number of boats and fishers who needed to stay when they were fishing in these areas (Løseth, 2018). Thereby several fishing receptions were established in the areas of Utsira, Karmøy, and Haugesund. Due to overfishing of herring, the fishers moved further north and abroad (Løseth, 2018). Other industries started growing at Haugaland and became the main income. Still, there are some fishers left, and these days there are registered two hundred and thirty-one commercial fishers on Haugaland, with a hundred and fifty-five settled on Karmøy (Fiskeridirektoratet, 2022).

Hydro Aluminum was established in 1963 in Karmøy and became important for the region not only as a workplace but to make the region known in the European industry market (Norsk Hydro, 2020). Hydro has a plant in Karmøy that is a pilot plant for producing the most environmentally friendly aluminum in the world with energy-efficient production technology (Hydro, 2022). Hydro (2022) claims this to be groundbreaking technology, not only for Hydro and Norway but the whole world. The aluminum produced here is being used as voltage wires as well as constructions consisting of plates and profiles (Hydro, 2022)

During the mid-nineteenth century, several important industries were established in Karmøy and Haugesund. At that time Haugaland was desperate for working places as the herring was over consumed and the local fishing fleet was disbanded many men were unemployed. The region became a growing industrial area and an important supplier to the oil

and gas sector. Several local shipping companies were established in the late nineteenth century with their focus on supply to the oil and gas sector. Some of the shipping companies were already established before the oil adventure in Norway, developed from fishery and tankers, but got their take off due to the oil. Today this history is important evidence that the industry manages to adapt and innovate to market needs, especially regarding renewable energy activities (Knutsen Group, n.d.; Østensjø Rederi, n.d.; Solstad Offshore ASA, n.d.). The shipping industry is in a change, planning vessels for maintenance of offshore wind.

There are also other industries that have established industrial activities at Haugalandet that provide technology used both in the oils and gas sector and wind power (Gram & Antonsen, 2021; NHO Rogaland, n.d.). The technology used on platforms could be important in offshore wind and is especially like the floating wind. For the world's first floating wind park Hywind Scotland, thirty percent of the delivery came from Norwegian Industry (Karmsund Havn, 2021). The examples from the shipping industry, Hydro, and other industries demonstrate that this is a region used to changes, different use of technology, and innovation.

## 4.3 Stakeholders

### 4.3.1 Fishery

According to The Norwegian Directorate of Fisheries, there are registered two hundred thirty-one persons that have fishery as their primary work at Haugalandet, whereas the majority of hundred and fifty-five is located at Karmøy (Fiskeridirektoratet, 2022). The Norwegian Fishery Organization is an organization for fishers in Norway. The organization is important as fishers in Norway are considered self-employed which has an impact on both terms of taxes and welfare schemes (Norges Fiskerlag, n.d.). The fishers are organized in their different local organizations, in the region of Haugalandet, the local organizations belong to The Norwegian Fishery Organization West. The Norwegian Fishery Organization has stated that they are in general against the offshore wind but have accepted the areas of Utsira North and Southern North Sea II. Further, they have experienced that their insight has not been heard on several occasions and that there is a lack of knowledge of the long-term effect on fishery (Norges

Fiskerilag, 2022). In the same announcement, Norwegian Fishery Organization stated that they expect the government to follow up on the statement of the parliament concerning a good coexistence of offshore wind and fishery.

The Norwegian Directorate of Fisheries has recommended that professionals from the fishing industry should be involved in all parts of the planning and that there should be made a good relationship with the fishing industry. This is something that will be important to facilitate coexistence (Fiskeridirektoratet, 2012). Former Minister of Petroleum and Energy, Tina Bru, in the previous government of Solberg, held one cooperation forum in September 2021 for relevant stakeholders of offshore wind were among fifty different stakeholders were represented (Olje- og energidepartementet, 2021c). Bru announced that coexistence is important for the planned wind park to be successful therefore coexistence with existing industries is an important goal of the cooperation forum. The government of Støre was introduced in October 2021, with the new Minister of Petroleum and Energy, Marte Mjøs Persen, who also announced that good coexistence is important (Olje- og energidepartementet, 2021e). The cooperation forum has not so far been introduced further by the new government of Støre.

Due to a lack of data from a long-term perspective, it is hard to tell what the economic and environmental costs offshore wind will have on fishery. Berkenhagen et al. stated that most research done on fisheries has been done in small areas over a short period of time, therefore the long-term effects of all planned offshore wind farms are still unknown (Berkenhagen et al., 2010). Considering the lifetime to wind farms to be around forty to fifty years, it is reasonable that the effects from a long-term perspective are unknown (Mooney et al., 2020). Mooney et al. (2020) still emphasize that there is more knowledge and data today on the construction and operation period that should be considered by stakeholders, but there is still a need for more research in the field. Sokoloski et al. (2018) find that projects that involve stakeholders from the beginning of the planning and development are more likely socially accepted by affected parties. It is also crucial that policymakers and shareholders understand their impact on public discourse in the development of offshore wind parks (Sokoloski et al., 2018). According to this research, it occurs important to involve stakeholders, such as fishers, from the beginning of

planning and development. The former government of Solberg tried to facilitate dialog through the cooperation forum, but if the outcome was successful seems to be a disagreement. Today the present government of Støre should further follow up by facilitating dialog and further taking responsibility for the public discourse.

#### 4.3.2 Military

NVE confirms in its impact assessments rapport that parts of Utsira North collide with the Norwegian air force space for a military exercise, but concludes that it will not affect the Norwegian Armed Forces (Berg et al., 2012). The Ministry of Defense has a rather opposite understanding and assumes that Utsira North will influence their function. Further, the Ministry of Defense underlines that coexistence is impossible and that the military training areas will have to change location (Det Kongelige Forsvarsdepartement, 2018).

Jongbloed et al. (2014) investigate how the establishment of offshore wind may have consequences for different actors conducting areas at sea, such as the military that is depending on areas offshore for military activities. A study from Portugal by Diaz et al. (2019) underlines the same issues on the coast of Portugal where there are several military activities, Diaz et al. conclude that it would not be feasible to install offshore wind farms in these areas. In the study by Jongbloed et al. (2014), it is being suggested that even though it may be conflicts between the two industries there is an opportunity for cooperation that makes the area of the North Sea feasible for offshore wind. According to this, the offshore wind farms will affect the military as a stakeholder but maintaining coexistence seems possible.

#### 4.3.3 Energy companies

As mentioned, there is no official list of whom have applied for licenses yet, but Kvitebjørn Offshore Wind has announced that they already applied for a license (Haugaland Vekst, 2021). Kvitebjørn Offshore Wind was founded in 2020 working on projects for floating offshore wind (Daimyo, n.d.). Several companies are interested in applying but are still waiting for the quality guide. Among them are Aker Offshore Wind and Deep Wind Offshore. Aker Offshore Wind develop from Aker Solutions in 2020 and is now collaborating which gives

Aker Offshore Wind several competitive advantages from technology to a wide market perspective (Aker Offshore Wind, n.d.). While Aker Offshore Wind had its incubation period at Aker Solutions, Deep Wind Offshore is a local development company established in Haugesund. Deep Wind Offshore has solid support from industrial owners in the shipping, offshore, and supply sectors. Knutsen OAS, Haugaland Energy, and Sunnhordland Energy own the company all these companies are regional and placed on the west coast of Norway (Deep Wind Offshore, n.d.). Both Aker Offshore Wind and Deep Wind Ocean are members of the cluster Norwegian Offshore Wind (Norwegian Offshore Wind, n.d.)

#### 4.3.4 Testing

Norwegian Offshore Wind is Norway's largest offshore wind cluster with over 270 members. Norwegian Offshore Wind belongs to MET Centre, which stands for Marine Energy Test Centre. The MET Centre is allocated ten kilometers offshore from Karmøy and is close to Utsira North. Their aim is to gather data and test technologies for offshore wind in the North Sea (MET Centre, n.d.-a). For now, there is established three windmills in the test area, but there are planned and given licenses for seven. These seven windmills will provide up to eighty-five megawatt that will be connected with a new cable from the test area to Skudenes transformer station at Karmøy (MET Centre, n.d.-b). The data gathered may provide important information for the offshore wind industry. NORCE, Norwegian Research Centre AS, is an institution for research and innovation and works among other things with energy, climate, and the environment (NORCE, n.d.). NORCE and MET Centre are planning a collaboration on a wave observatory at the MET Centre area outside of Karmøy as data from waves today are limited. The data will not only be important in the development of Utsira North, but all floating wind around the world (MET Centre, 2022).

## 5. Research Approach and Methodology

This thesis aimed to understand the impact the offshore wind industry could have on a region close to offshore wind farms, and further what has affected that Norway is relatively slow in introducing offshore wind. Therefore, Utsira North seemed like a suitable case to do a

case study because of the short distance to shore and that Utsira North has been approved for offshore wind since 2012 (NVE, 2018a; Utsira Kommune, n.d.-a). A case study aims to investigate one or several cases in-depth and the contextual circumstances (Sovacool et al., 2018). Focusing on the region related to Utsira North makes this research a regional case study. Case studies have been criticized by several scientists in social science for being weak. Van Evera (Van Evera, 1997), elaborates that one single case study is poor to confirm a theory. In the case of this thesis, there is little theory to be confirmed due to the low research in the field of the socioeconomics of offshore wind. Therefore, a bottom-up approach is conducted to gather theory through primary data before elaborating the results with some relevant theory.

Sovacool et al. (2018) describe the grounded theory as a method of data analysis in cases where there is very little literature to conduct. Therefore, grounded theory is suitable for this thesis as there is little theory in the field of offshore wind and socioeconomics to be confirmed. When collecting data semi-structured interviews is used to access people's opinions and meanings (Sovacool et al., 2018). Data collection and analysis of qualitative data have been criticized for the lack of standards, as the methods can vary a lot (Sovacool et al., 2018).

To gather the data needed to map the potentially affected parts it seemed most feasible to conduct a qualitative method approach. Sovacool et al. (2018) declare that the benefits of the quality method are how the scientist is working in the field constantly instead of analyzing numbers. In other words, one is really working in-depth on the findings along the way of the research. When doing qualitative research several methods and approaches are conducted (McNabb, 2020). Something that can be experienced as a bit confusing when doing this sort of research for the first time as it was for me. Further, Sovacool et al. also determine how qualitative research is seeking to understand people or groups in different contexts. For my thesis, it was crucial to meet the different actors in their context to understand how they interact with Utsira North. Therefore, the first step in my research was to become updated on the process of Utsira North by analyzing the work by the government so far and to understand the approach of different actors I read several commercial national and local newspapers. Out of this, I got an insight or a broad picture of actors that could be relevant in the case of Utsira North, and



then settle on whom I needed to talk to. Furthermore, I wrote the literature review that enlightened me on the field of wind power and what issues there are from other related cases.

In my findings below, I have categorized “Findings vol 1” and “Findings Vol 2” this is because when sampling and analyzing my data, I discovered another level of the research problem. Namely, the slow speed of the development did not seem to correlate with stakeholders’ interests in the case of Utsira North. Therefore, it seemed suitable to present my findings in two different categories. While Vol 1 has a more regional opportunities approach concerning the socioeconomics effect on the region. Vol 2 went in-depth on the institutional level of the energy transition detecting what is affecting the speed of progression.

## 5.1 Semi-structured interviews

To start with I had planned for about 6 interviews, but along the way when working with my data it ended up with over 20 interviews. This was in a combination with a lack of data to cover my research and due to the network established along the way. Several of the interview objects were helpful and interested to know more as well and therefore helped me get in touch with others. Blaikie (2009) refers to this as theoretical sampling that is common in grounded theory. This is because in the development of theory the data requires to be compared and therefore cases are added until there is no more new information to be obtained (Blaikie, 2009).

Before I could start the interviewing process, I had to begin with planning the interviews and making an interview guide. I planned for a semi-structured interview with some direct questions, and room for conversation. The semi-structured interview is a well-used method in energy social science and is both “... inductive and exploratory by nature, seeking to access a particular perspective in-depth, rather than to test a specific hypothesis” (Sovacool et al., 2018). From my starting point, I had to get as much information as possible, and by doing semi-structured interviews there was less chance for me blocking for information by asking too leading questions. I found this very effective in my case as people had a lot of different opinions and perspectives in some cases. The design of the interview guide differed slightly from the object being interviewed, but the core of the interview remained consistent.

## Exceptions

There are two exceptions where semi-structured interviews were not used. This was in the interview with a prospective developer in Norwegian waters and NORCE. These two participants did prefer that I sent the questions written by e-mail which I accepted as their information could be essential for my thesis. For me, it was a good experience, I got the answers I needed and saved much time concerning transcription.

On the other hand, this could limit my results if there is more information on the matters than what I have gained access to. At the same time, this is always a concern when doing interviews. Now, they got time to consider their answers and not bring irrelevant information. Several of my interview objects also said that I could contact them by mail if I had any more questions, which I did with Utsira municipality and Norwegian Offshore Wind. This was helpful to ensure that I had not misunderstood what they said and to get further information on what they knew about what is affecting the time it takes.

## 5.2 Data sampling

Data collection through semi-structured interviews can be either with individuals, small groups, or stakeholders that may be experts on the case (Sovacool et al., 2018). Firstly, I had to identify the various parties that Utsira North could impact. After that make a sample of relevant informants and contact them. Qualitative sampling is often designed to gather a variety of relevant experiences for the study's purpose (Sovacool et al., 2018). Here I also had to choose representatives, should I contact the leaders or their workers in the larger companies, and what would be most relevant for my research. Sovacool et al. (2018) emphasize that interviews give a deeper understanding of human experiences and opinions, but this also brings a challenge of how the perspectives of the interviewees and the organization they represent are related. I concluded with the leaders as the leader's role is to represent their company, and then the different actors were represented equally. At the same time, this may weaken my data, but I had a limit of time and had to choose what would be best for the quality of the thesis. If this were a more extensive study, it would be valuable to conduct interviews with both parties.

During the time of analyzing data my research developed. As my research took a turn concerning what impacted the speed of the development of offshore wind, I had to do some more interviews to understand the reason for the slow progression of Utsira North. Thereby my sampling entered another level of interviews. My first sample of interviews was mostly local or had a regional relevance that occurred easily to reach with transparency of their concern about offshore wind. While for my second sample I had to enter a national governmental level. This was a challenge, as these occurred more unavailable to reach and less transparent in their stance on offshore wind. Therefore, my interviews are from different levels both local and national.

I took notes and recorded the interviews. I knew I would not lose any critical information by recording the interviews. Not all the interviews were recorded, as some felt uncomfortable about this; in these cases, I took notes instead. Due to my notes during the interview, I could easily categorize different actors and break down data before I had transcribed the whole interview. This was very efficient due to the number of interviews and limited time. When asking questions, they were a combination of open and direct but avoiding leading questions (i.e., What do you think of Utsira North? Are there any potential conflicts between the new industry and established industries?). All questions and topics cannot be demonstrated here due to the comprehensive and personalized design of the interviews, but in the analysis below, the data is presented and illustrated in a graph.

When transcribing the interviews, I avoided including words such as “ehm” and “ahh”. I was also careful not to add any meaning to the interviewees and transcribed them as precisely as possible. Due to the interviews being conducted in Norwegian, the transcription was also done in Norwegian. The transcriptions were a demanding part of my thesis that required much time. When transferring the data to the thesis, I tried to be as precise as possible in my expressions in English. This was a challenge and may give the study some limitations.

### 5.3 Data analysis

Analyzing semi-structured interviews can be a challenge. Code the data is difficult in the semi-structured interview as the answers vary and there are no standards (Sovacool et al., 2018). This is recognizable in the presented analysis of data in table 2 below, as not all interviewers are included in the table due to there being no standard answer or opinion on the matters. In my approach, I work with grounded theory. Sovoacool et al. (2018) describe this as the researcher avoiding attaching to a theory, but rather grounding the analysis in the data itself. Still, I found some inspiration from both content analysis and discourse analysis when breaking down the data. The content analysis is the most structural way that codes all the sampling from interviews to documents with the aim of categories patterns and presenting them in graphs or numbers, but this approach is not very effective for deeper analysis (Sovacool et al., 2018). So, when analyzing my primary data, that was my interviews, I first conducted a more structural approach, reminding about content analysis, categorizing the different data, and presenting it in graphs. Discourse analysis is much used to understand structures of power that can limit or shape agency (Sovacool et al., 2018). Therefore, when analyzing the data from my second level of the research question, the discourse analysis became truly relevant. By combining or taking inspiration from different approaches I aimed to go in-depth in analyzing my data.

In total, twenty-one, actors were interviewed about the offshore wind park Utsira North. The objects are sorted by categories in the table below; Municipalities (n=3), Local Industries (n=4), Fishery (n=6), Developers (n=2), and others (n=5). Few of the objects are directly related to the development of Utsira North. Still, some could be important actors in the future, and some are important contributors to be heard in the ongoing wind park planning process. The actors mentioned by name were all very helpful and interested, including the local fishers. The names of the local fishers have not been mentioned because that is irrelevant information, but they are all fishers as a primary profession. Local fishers 1 and 2 are working on smaller boats, while local fisher 3 is working as a fisher and is a co-owner of a company that owns three ships. The actors called “shipping” were never interviewed, but I had a dialog with them.

There are several local shipping companies that I tried to contact. Unfortunately, no one of them was interested in doing an interview. The answer I got was that Utsira North not was something they were working on now and could not see how it would be relevant for this thesis. One of the companies further wrote that when Utsira North is more settled, they will be prepared for the new industry as they have always followed the market demand. At the same time, when I interviewed Deep Wind Offshore, they referred to one of the shipping companies where I had been rejected as a company where they have a close dialog regarding Utsira North. So, even if the shipping industry held back information, the overall impression is that offshore wind is an industry they are preparing for and will be a part of, including Utsira North.

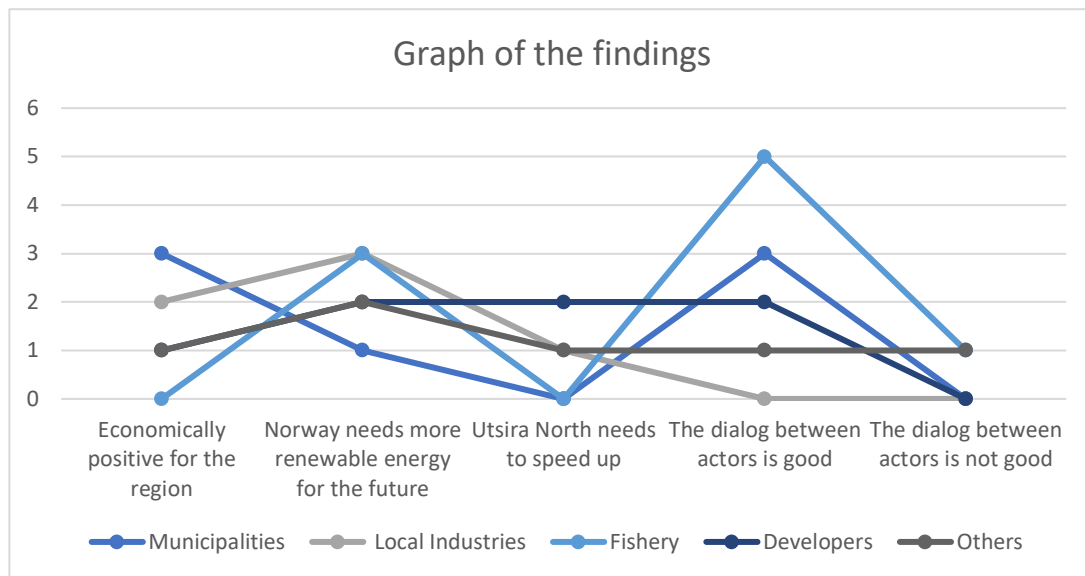
	A Municipalities	B Local Industries	C Fishery	D Developers	E Others
1	Utsira	Seam	Local fisher 1	Deep Wind Offshore	NORCE
2	Karmøy	Norcable	Local fisher 2	Prospective developer in Norwegian waters	Bellona
3	Haugaland Growth	Haugaland Industrial Park	Local fisher 3		Norwegian Coastal administration
4		Karmsund Port	Local hobby fisher 1		the Norwegian Maritime Directorate
5		Shipping	Local hobby fisher 2		Norwegian Offshore Wind
6			The Norwegian Fishery Organization		

*Table 1: Grouped interviewed objects*

Furthermore, I have tried to segment the data into key categories; instead of using the different actors' names, they will now be referred to by the letter and number listed in the table above. The different categories are selected from the topics in the interviews and where the different actor stands on different cases. Not all the actors had opinions on everything, as it was out of their relevant area of expertise and thereby did not comment on the matter. That may affect how the results are presented in the table. Further, the same key findings are also represented in the graph below.

Economically positive for the region	Norway needs more renewable energy for the future	Utsira North needs to speed up	The dialog between actors is good	The dialog between actors is not good
A1, A2, and A3 B3 and B4 D1 E5	A3 B2, B3, and B4 C1, C2, and C3 D1 and D2 E2 and E5	B2 D1 and D2 E5	A1, A2 and A3 C1,2,3,4, and 5 D1 and D2 E5	C6 E2

*Table 2: Grouped interviewed objects*



Graph 1: Graph of the findings

## 5.4 Findings vol 1

### 5.4.1 Fishery

My findings through analyzing the data were several, but first I may state that no one of the actors is totally against Utsira North, but there are different degrees of how much in favor. There are pros and cons to everything, but according to my interviewers, Utsira North is a good alternative for offshore wind and an area of little conflict with other industries, such as the fishery. Even though, of course, the fishers would wish to see their field untouched by other industries they agree that Utsira North is a suitable area with little to no fishery today. There also appears to be an understanding, among the local fishers, that there is a demand for more renewable energy sources, and that problems concerning wind farms cannot be isolated but understood in a larger context. Their worries for Utsira North are rather concerning the construction phase and where the shore cables will be, but this will only be a problem during the construction phase, not a permanent issue. Overall, when it comes to the case of Utsira

North the local fishers are experiencing being heard and there is a dialog between local actors. At the same time, when interviewing The Norwegian Fishery Organization (NFO), they declare that at the forum established by the previous government the fishers were the stakeholders with the least amount of speaking time and that there has only been held one forum so far, that was back in 2021. Still, by the NFO there is a higher degree of worries about not being heard as a stakeholder concerning the Southern North Sea II than concerning Utsira North.

NORCE has done research on what effect offshore wind will have on fishery and declare that the windfarms can have a short-term negative effect. At the same time, it is stated that Utsira North is an area of low fishing activities today, but that could overlap in the future. This is due to the belief that there could occur a spill-over effect as the fish can reproduce in the areas of the wind farm without being fished. The research by NORCE, therefore, shows that in a long-term perspective the fishery will be positively affected due to the fish stock reproduction. Still, the area of Utsira North has little fishery today, and therefore the impact is minimal. It is also added that Norway does not have any commercial wind farms yet and that the fishery areas in Norway are almost unlimited. Most European countries with a coast have some wind farms up and running today with co-existence with the fishery.

#### 5.4.2 Municipalities

The nearby municipalities are very in favor of Utsira North. Utsira municipality itself has big ambitions for what positive effect the wind park will have on the island. The municipality is in dialogue with different actors to ensure the importance of the location of the island to the wind park. Utsira is hoping that there will be located a transformer station on the island this will be important for the energy supply to the island and could also provide a few jobs. Further, the municipality is working for that there will be a maintenance base where drones and vessels can be stored and operate close to the wind park. Lastly, they wish for a follow-up research center as Utsira North will be a pilot for floating wind in Norway. All of this would give a positive ripple effect on the community on the island. The aim is that these three plans will provide a few new workplaces that will make new people settle on the island, and that both the ferry and harbor could be improved due to this. To ensure these plans the municipality is



working proactively. With only seven people in the administration, a new position as a business developer has been created, focusing primarily on the case of Utsira North to ensure all opportunities are considered.

Even though the wind park may ruin the endless view and sunsets for the inhabitants on the island there is little to no resistance against the wind park. The population is used to wind energy, because of the two already exciting windmills on the island, and have experienced what benefits it may provide. At the same time, Utsira North will be a huge area and the municipality is looking into if there is a way to prepare people with illustrations of the new view placed on various viewpoints on the island. In the end, the benefits for the local community could be much greater than the ruined view, and therefore in a holistic approach, the community as well are in favor of Utsira North. The greatest concern seems to be for the unknown consequences of how biodiversity will react to sound and vibration.

The other surrounding municipalities at Haugalandet also believe that Utsira North will have a positive effect on local industry and business. To ensure their value creation of the development of the wind park Haugaland Growth has recently hired a business developer as well, working on wind energy. Due to the region being a supplier of industrial goods the analysis for Haugaland Growth in 2020 showed there is a potential of six thousand five hundred new workplaces in the region only by the repercussions of Utsira North (Erraia et al., 2020). Therefore, when interviewing the local industries, they were very positive about Utsira North, and several were referring to this analysis.

#### 5.4.3 Local industries

The local industries seemed excited about Utsira North and how they could contribute to this new industry. Utsira North is also being used for marketing the industries and industrial areas in the region at an international level to promote innovation and their focus on renewable energy. As a result, even before it is built, Utsira North provides a competitive advantage to the region.

While most of the industries in the region are very optimistic there are contradictions. Norcable is a producer of green aluminum cables and has great focus on environment (Norcable, n.d.). Norcable comments that Utsira North is “too little too late”, meaning the technology exists so why does not Norway get started and plan full scale at once. Further, Norcable adds that the competitive advantages for the region will despair if Norway does not scale up and start the development soon. Other countries are getting started, so Norway is not big and effective enough in their development of offshore wind Norcable express. Norcable is also concerned that, in the end, it will all come down to financial funding, and that big international players will seize business opportunities from local industries. Norwegian Offshore Wind (NOW) also worries that Norway is getting too late started with the development. And confirms that this could make Norway lose the leading position in relevant technology that the nation has from the oil and gas sector. Further NOW would prefer that there were more licenses to be allocated by the government in this first round. The developer Deep Wind Offshore, which is partly locally based, is hoping that their local anchoring gives them a competitive advantage in the allocation process and believes that local industries will be favored among international actors. But as a developer, Deep Wind Offshore is impatiently waiting for the licenses to be allocated.

That Utsira North is not big enough, or not scaled up from the start is another concern from several of the interviewed object. Even some of the fishers stated this as a problem, not because they are so happily sacrificing their areas at sea, but because they see it as important that the wind park is efficient and economically feasible. In the case of Utsira North, there is no issue of hybrid cable to Europe, which was also mentioned as a concern by some of the stakeholders. Bellona states this to be a downside for international investors as this may affect the value of the wind park, due to the minimizing profitable advantages. Bellona is generally skeptical of the renewable energy approach Norwegian policy hold, which implies that there is a lack of coordination between different ministries and directorates. There have been cases in Norway where stakeholders have demonstrated their resistance to wind parks and Bellona has been involved, but there has not been given any notification of concern by local stakeholders when it comes to Utsira North.

So far in my research, the only socioeconomic dynamics findings I could state were positive. In one way this was frustrating because there was no new information to be found. While from my point of view, when reading the media there seemed to be debate and disagreement among stakeholders as that was the reason for the delay in allocating the licenses. But when doing in-depth research, I could not find any big disagreement in the case of Utsira North. This got me thinking, what is the real reason for this time delay by the government, I had to enter another level of my research.

## 5.5 Findings Vol 2

When I was about three months into my thesis, still interviewing different stakeholders, I had an evaluation with my supervisor. Whereas I thought that by now I would have found several potential effects of Utsira North that not has been promoted or uncovered by media or earlier research, I discovered a region that was prepared for Utsira North and had done their own analysis of what positive effect it would have on the region. Therefore, my research took a turn. When I started my research, I had the impression of conflict of interest through the media. Also, when doing my literature review concerning socioeconomic effects the social acceptance and stakeholder conflict was a big debate and I found a gap in how this affects offshore windfarms this close to shore. But when working with my study there did not occur be any big stakeholder conflict in the case of Utsira North and the economic advantages were strongly documented. This was what lead me to the next level of my research if there are no significant potential conflicts why is it taking so long time?

Due to my limited time, I had to be efficient in my further research. This was a challenge as governmental institutions at the level I needed to talk to now were difficult to reach and I had no network. Therefore, my primary data to answer the further research question is low and could have limitations on my results. To enrichen my finding, I have therefore supplemented them with secondary data.

### 5.5.1 Primary Data

When interviewing The Norwegian Maritime Directorate, it was mentioned that there is a lack of laws concerning the crew on maintenance vessels. This was only said in a subordinate clause when we were talking about their connection or role to Utsira North would be, and therefore I did not ask further about this. But they were in the working process of establishing regulations and laws for these maintenance vessels concerning safety onboard. In my interview with Utsira municipality, it was said that there was a need for the government to decide that Utsira municipality would get a transformer station. Also, the different municipalities, developers, and fishers stated that there was an expectation that the government would decide where the cables to shore should go. These examples from the different interviews could emphasize that institutional and governmental regulations are still missing.

Also, when interviewing Norwegian Offshore Wind, it was said that NVE has got the responsibility for parts of the development of Utsira North. Further, that NVE had a scarcity of professionals working on offshore wind and it often took a long time before they could give an answer. At the same time, Norwegian Offshore Wind underlines that it is hard to say what is affecting the time it takes before licenses are approved but one must remember that there are no fixed requirements for how long such processes should take. Further Norwegian Offshore Wind applies that the more adversity the longer it takes, and it is important that NVE does careful assessments. It could be multiple reasons affecting the time concerning regulations and laws for international actors and stakeholders. Also, the government of Støre, which is relatively new, must be introduced to the field, and even though they have many advisors and professionals to guide them this is a demanding process.

### 5.5.2 Secondary Data

The government of Støre declared in the fall of 2021 that they will aim to facilitate offshore wind through an ambitious strategy (Olje- og energidepartementet, 2021e). The strategy is supposed to include, among other things, laws, and regulations. The government further state that the work with offshore wind power is groundbreaking work and requires sufficient resources and knowledge to ensure efficient and thorough processes. To ensure this,

it is announced in the press release that the government will increase funding for this work on the offshore wind by ten million NOK. The remaining work before licenses and areas can be allocated depends, among others, on a clarification related to power grid issues. This is also slowing down the process of the quality guide (Olje- og energidepartementet, 2021e).

Øvrebø (2022) has estimated that by conducting the outlined planning and licensing process that the first windmills will be running in the Norwegian North Sea in ten years' time, about 2032. The Ministry of Petroleum and Energy released their outlined planning and licensing process for consultation at Stortinget in the summer of 2021, including all the steps the applicant of licenses of offshore wind had to implement (Olje- og energidepartementet, 2021a). Some of these processes could take up to 24 months before being approved; still, most developers are waiting for the quality guide and have not started applying yet (Øvrebø, 2022). Developers are reacting to the plan of The Ministry of Petroleum and Energy as some of the steps in the licensing process could be done parallel and not chronologically, which could speed up the process by one to two years less (Øvrebø, 2022). Øvrebø (2022) underlines another obstacle that is the grid which must be expanded to withstand the planned windfarms, who is to be responsible for this is uncertain, but Statnett is preparing to take this role. Considering Utsira North being so close to shore it is not an alternative for foreign cables but at Southern North Sea II this is a debate, which also may affect the time of progression (Øvrebø, 2022).

Although no licenses have been allocated yet, prime minister Støre announced in May 2022 that the government aimed to expand offshore wind in Norway by planning new areas that hopefully could be assigned to developers by 2025 (Statsministerens kontor et al., 2022). In the same press release, The Ministry of Petroleum and Energy announced that they would evaluate how the licensing procedure may be shortened by assessing and approving the licensing and detail plan of the developers as one and thereby save time (Statsministerens kontor et al., 2022).

## 5.6 Reliability and validity

The study's limitations also affect the reliability and validity of my findings. Longitudinal studies have the opportunity to study the case over time in-depth and improve the reliability of the data (Sovacool et al., 2018). This was not possible for my thesis due to my limitation of time. However, the findings may be confirmed by revisiting the data under different conditions (Roberts et al., 2006). The participants confirmed some of the data in their various environments when doing several interviews. I have also been careful not to take the participants' quotes out of context and instead reproduce a summary of their opinion and perspective on the matter. I have tried to avoid favorited sections that highlight my points of view. Roberts et al. (2006) emphasize that it is essential to avoid “cherry-picking” quotes and state that selected quotes should present the tone of the response generated.

Validity can be a challenge when conducting qualitative research approaches. The researcher's bias may affect data selection and recording and lead to interpretation (Roberts et al., 2006). Further, Roberts et al. (2006) determine that it helps the validity of the study of the research to be transparent so that the reader understands the decisions that have been made along the way. For my thesis, I have tried to keep my studies as transparent as possible; that is also why the outcome differs from my starting research question. Sovacool et al. (2018) state that validity will always be inevitably often in relation to the results and interpretation. There is also a difference from internal and external validity. The internal aims to identify what variables affect the observation and external validity to investigate if the study's results can be generalized (Sovacool et al., 2018). In my thesis, I acknowledge that there may be other hidden variables that affect my observations, but this was what I was able to identify from my position. The identified factors and results may be recognizable in other energy transition literature and cases concerning external validity.

## 5.7 Research ethics and limitations of the research

It is essential to consider research ethics when doing interviews. When interviewing local fishers, it was necessary to create a safe space. Some of the fishers felt uncomfortable with

recording the interviews, and then we agreed that I instead took notes and did not record the interview. The fishers were informed that they would be presented anonymously to ensure that they could express themselves without being afraid of any stigma from their working environment. Before recording or doing any interviews, the interview object signed a consent form with information about the thesis and a declaration that I was allowed to do and record the interviews. The recording was temporarily saved on a locked disk only for my use in this thesis. When I was done transcribing my interviews, the recordings were deleted. The thesis proposal was signed up and approved by NSD (Norwegian Center of Research Data). Under any circumstances, the involved interviewed objects were allowed to withdraw.

As mentioned, the research does have limitations, several of them related to the limited amount of time, which also affected my selection of interview objectives. If I knew my thesis would take a turn, I could have started earlier on to reach out for interview objects in the government or the institutions by the government. This group of informants was the most difficult to contact and is at another institutional level than local municipalities, companies, and interest groups. There were several others I tried to contact but never answered me, such as the military, some politicians, and larger industries. In addition, it was several shipping companies that did not want to participate. And further, I was not able to get in touch with a large local construction company, building platforms, that could be relevant for emphasizing local industrial effects. I do not believe that my thesis would look very different, but there could be more interesting information if these mentioned were able to contribute.

Another limitation of my research is that the spokespersons from the different actors may interfere with personal opinions and the interest of the organization they represent. This was also mentioned by Norwegian Offshore Wind that the stance on the offshore wind by the Norwegian Fishery Organization may vary to whom you meet. This is relevant for all the organizations I met that there will be some intern disagreement and different understandings of the matters. Still, I must trust that when I reached out to the organization, they set me in contact with the person most relevant for my thesis.

When doing the interviews, I tried to stay as objective as possible, but this became a challenge when my study took a turn. I acknowledge that I found myself more critical of policymakers and their influence on energy transition. At the same time, I was conscious of my role as a researcher. According to some scientists, even if systematic efforts are made to reduce the risk of bias or inaccuracy, all research has this limitation (Roberts et al., 2006).

## 6. Summary of the findings

In the following chapter, I will present a summary of the findings and how they illuminate the research question: “What socio-economic dynamics will offshore wind affect? A regional case study of Utsira North.” I have divided my results into three sub-questions to shed light on each of the issues from the perspectives of my interviewees.

### 6.1 What different actors’ groups are, or will be, involved, and what is their stance on Utsira North?

To answer my research question on what effect offshore could have on the region it was essential to determine who the involved parties would be. I have dived this part into the different sections I presented above when analyzing data and will here summarize how they will be involved and their stance on Utsira North.

#### 6.1.1 Municipalities

The surrounded municipalities will only be affected indirectly as they do not have any ownership of Utsira North nor do they have any direct economic advantages. Therefore, they are not involved or will not be involved actors. The municipality of Utsira mentioned that it was unfair that they did not get any economic advantages for being so close to the planned park and announced: “...strange that we do not achieve any taxes of Utsira North”. Still, the indirect economic advantages for the region are conjectured to be great, both in the settlement, and employment, and new industries. These three factors are important for the municipalities and something they will facilitate for. Settlement and employment generate more tax revenue for the municipalities in the region and are therefore important indirect factors of Utsira North.



This potential economic growth is reflected in the municipality's stance on Utsira North, which is very positive. The municipalities are working together through Haugaland Growth which has several business developers, and some are working primarily on Utsira North. This shows how invested the region is in the success of Utsira North and how they aim to ensure the potential goods that could be generated from the park. The region's standings are very optimistic for the wind park and there are few bringing up any negative consequences. When I asked the business manager of Karmøy about fishery he said, "There are few that have fishery as their primary work." Utsira on the other hand was more concerned about the negative consequences of the birds and the view but claimed that it could be facilitated for good solutions. Another concern was where the cables to shore shall go, and that this should be well planned to avoid many different routes. Overall, the region's stance was very optimistic and ready for a new energy adventure that will bring further value creation.

#### 6.1.2 Local Industry

There seems to be a varying degree of where the different actors' stances on the matter of who will be involved. The municipalities refer to the ripple effect of Utsira North to be great. While the ripple effect in a long-term perspective may influence local industry, the directly involved industries are less. Karmsund Port is maybe one of the few industries that will be directly involved, especially during construction time and most likely during further maintenance as well. As local shipping companies were unwilling to contribute to this study, it is hard to tell to what degree they assume to be involved in the development or maintenance of the wind park. Haugaland Industrial Park could be directly involved if their port would be used to assemble the wind turbines, but this is still unclear. Seam AS who is provider of hybrid and completely electric ships and the maritime business, would not be directly involved in the development of Utsira North, but if there are vessels to be reconstructed for maintenance, they could be relevant (SEAM, n.d.).

Norcable is more critical to the positive approach the municipalities provide. Norcable presents Utsira North as; "Too little too late". Meaning that the park is too small which affects the developer's choice to choose the industrial supply of technology from larger or international

companies rather than local. Norcable is optimistic about green energy and wind power but states that Norway will lose its lead in the technology if they do not scale and speed up. This could lead to few local industries getting the benefit of being close to Utsira North, and thereby Norcable speculates that there will be low involvement from local industries.

The local industries that I met with were overall positive in their stance on Utsira North. Although there seem to be different approaches to what involvement the industries in the region will have there are no major opponents to Utsira North.

### 6.1.3 Fishery

The fishers interviewed saw Utsira North as an area of little conflict. Although they were skeptical of offshore wind in general, they admitted the need for renewable energy. Several stated that when giving up fishing areas to other industries it was important that the energy would be used in Norway. The fishery has been considered when planning for Utsira North, and hopefully, this will also be done when planning where cables to shore will be. The way Utsira North is planned for now fishery will not be an impacted actor. On the other hand, the long-term consequences on fishery and marine life are still unknown and should be considered and further researched. The fisher stance to Utsira North can be considered neutral, of course, they wish that areas at sea were kept untouched by other industries but do still understand the need for energy.

### 6.1.4 Developers

Due to the delayed issuance of licenses, it is only speculations on what developers will be assigned licenses. Still, there are assumptions to believe that at least one out of the two interviewed will be assigned. From their point of view, it would be important to facilitate for local industries to supply technology, they are also speculating that the soon-to-be-released quality guide will emphasize local involvement. The local-based company Deep Wind Offshore believes their affiliations to the region will give them an advantage when it comes to the licenses and announced in the interview; "If we don't win at home, the future does not look promising". Although it is not announced who will be developers at Utsira North, there will be some to

develop the park and they will be directly economically affected. The developers whom I interviewed had a positive stance on Utsira North and the region.

#### 6.1.5 Others

The section of “others” is very varied in their profession and interest of Utsira North. But the actor that will be and is directly involved in the wind park is NVE. NVE is a governmental institution so their stance on Utsira North is neutral in this matter, but they are working on a thorough assessment of the area and how the development will be. The Norwegian Coastal Administration and the Norwegian Maritime Directorate are also governmental intuitions but are less involved at the curate stage. These are institutions that will be more involved during the operation time of the park as this will affect the marine traffic. None of these governmental institutions will gain any advantages from the wind park in an isolated view.

Bellona, Norwegian Offshore Wind, and Norce are independent actors who have different approaches to the wind park. Bellona is more skeptical of offshore wind close to shore and in fishing areas, they would prefer using the areas already conducted by oil and gas sectors. At the same time, they are in favor of renewable energy sources like the offshore wind but are concerned about the impact on nature and fishery. Still, Bellona has not been contacted by worried stakeholders in the case of Utsira North and is therefore not involved. Norwegian Offshore Wind and Norce both claim that Utsira North has no conflict with the fishery in the area and therefore is a feasible place for offshore wind. Norce has done research on fishery and offshore wind, but is not directly involved in Utsira North, still, they announce; “We hope our research will be conducted by government and industries to make good decisions based on scientifically proven knowledge.”

#### 6.2 In what way does the development of Utsira North relates to social acceptance?

All the local interviewed objects were asked if they had an impression of if there was social acceptance of Utsira North. No one had experienced any negative feedback or stance. Utsira Municipality was prepared that there could arise resistance when the park was

established, and the horizons became disturbed. For this, they prepared how to illustrate what the new horizons would look like. Fishers did also accept Utsira North due to the need for renewable energy sources but stated that it was important that the wind park gave energy supply to Norway and not out of the country. There is a high degree of social acceptance in the region. This can also be confirmed through Bellona which has not been contacted by any stakeholders, which has been done in other cases in Norway.

There may be assumptions to believe that the social acceptance of the wind park is due to the socioeconomic impact it may have on the region. Several of the interviewers hoped to achieve an indirect economical gain for Utsira North, as shown in the results of their stance. Haugaland Industrial Park mentioned that even though they may not be directly involved in Utsira North, the green energy was positive for their selling of the region. This may bring increased industrial activity to the region. The hope for the municipalities is that this industrial expansion will also affect employment, settlement, and education, as the analysis of Erraia et al. (2020) implies.

In my interview with Karmøy municipality, there was a concern about the gender divide in working life in the region, concerning educational level, vacancy rate, and profession. The business manager emphasized the importance of "...getting women to work full-time and in a wider range of jobs". It was important to motivate women to do career choices in varied professions, as the major of working women today were hired in health services. Further, it was referred to the analysis of the region by Erraia et al. (2020) that there would be a need for employment due to the development and establishment of Utsira North. The forecasted positive ripple effect of Utsira North seems to substantiate social acceptance in the region.

Both Karmøy municipality and several of the companies brought up the analysis of Erraia et al. (2020) that shows that the economics of the region will be positively affected by Utsira North. Further, my results show that it is assumed by the municipalities that economic growth will positively interfere with the socioeconomic condition of the region, due to a wider range of employment and growth in educational level.

### 6.3 What is effectively affecting the speed of the development of the wind farm?

My findings indicate that a lack of fundamental laws and regulations postpones the allocation of licenses to the developers. In the interview with the Norwegian Maritime Directorate, it was stated that there are no laws yet concerning the crew on maintenance vessels and that this was under development. Also, Norwegian Offshore Wind experienced the communication with NVE as a lot of waiting, which could be due to NVE are in a scarcity of workers working on offshore wind. If this is a direct consequence of what is affecting the speed of progression cannot be stated, but it may be an indicator that other government institutions as well are still working on frameworks concerning offshore wind.

The surrounding municipalities, fishery, and developers stress that there is a need for the government to decide where the cables to shore should be. As they underline that this should not be a decision done by developers to decrease the chances of many different routes. This can neither be confirmed to be a factor delaying the process but could be an issue that needs to be figured out before the quality guide is announced. These are examples that there occurs to be a lack of frameworks and that governmental institutions are not ready yet. Further, Norwegian Offshore Wind stated that even though developers are getting impatient, the Norwegian development cannot be called delayed, as the government never announced a specific date for publishing the quality guide or allocations.

## 7. Discussion

The discussion aims to elaborate on the results from chapter five together with some of the literature presented in chapter two, as well as other relevant literature from the field. Further, I will suggest further research that should be done in the field.

## 7.1 Social acceptance

My first impression of Utsira North, through the media, was that it was low social acceptance and that the resistance from stakeholders such as the fishery delayed the progression of the planned wind park. In the study by Bjärstig et al. (2022), they found how the media influenced public opinion, and that the media presented offshore wind as a problem that had a bad impact on social acceptance. At the same time, the study also finds that the media has developed the recent years and that offshore wind has been presented with fewer problems and more as a solution for renewable energy sources (Bjärstig et al. 2022). As we see in the study by Bjärstig et al. (2022) how the media portrays offshore wind does affect public opinions, on the other hand, Sokoloski et al. (2018) determined that the social resistance often is overestimated. This may have correlating factors, that when the media presents offshore wind as a problem the public discourse suggests the same but does not necessarily reflect the citizen's opinion on the matter.

Sokoloski et al. (2018) discovered that supporters and opponents of offshore wind development both thought the offshore wind resistance was significantly higher than it was in the reality. This was something my findings confirmed, as when interviewing potentially affected stakeholders as the fishery, there was no evidence of high resistance. Even though it had been demonstrated in the media as a stakeholder with low acceptance and obstacle for further development of offshore wind. Some of my other interviews claimed that fishers would always be against other industries claiming their rights of areas at sea because they knew they would have to give up some areas in the end, and therefore it was important to be resistant in general. In my experience on the other hand when interviewing local fishers, it seemed like there was an understanding that Norway needs more renewable energy sources and Utsira North was a suitable area for this. Thereby Sokoloski et al. (2018) findings seem to be accurate in the case of Utsira North and stakeholders such as fishery.

In the triangle of Wüstenhagen et al. (2007) the community acceptance underlines that the residents near wind parks often are skeptical of the establishment, but during the operational time the resistance decreases. The municipality of Utsira declare in their interview that the

citizens of Utsira are used to renewable energy sources like wind power, which may affect the experience of social acceptance on the island. At the same time, they are worried that due to the size of the park and how close it is to the island, the citizens may be reacting on that their view will be interrupted and therefore aims to prepare the citizens for their new view by constructing some illustration on different spots on the island. The effect of this is still uncertain but could give a foretaste on operation time that could ease potential resistance. On the other hand, I experience that Utsira municipality identifies strongly with renewable energy sources such as wind power and is rather proud to be almost a “host” of the floating wind park. It seems like the phrase “not in my backyard” is irrelevant or non-existing in the case of Utsira North.

There is little to no resistance against Utsira North, which is contrary to how onshore wind farms have been accepted in Norway. In the interview with Bellona, it was confirmed that they had not been contacted by any resistance groups concerning Utsira North. Aitken et al. (2020) found that resistance groups do not have any other influence on the development of wind farms except by delaying the processes. In Norway on the other hand the experience may differ. Øyfjellet was the second largest onshore wind farm in Norway, that had to be deconstructed due to interfering with reindeers grazing areas (Strøm, 2021). The resistance from the Sami people had been there all the time, still, the developers were allowed to build the park that may confirm the findings of Aitken et al. (2020). On the other hand, this case led to the Supreme Court where the Sami people won, and the wind farm had to be deconstructed which demonstrates, after all, that if the stakeholder’s case is valid they may have an influence on the result. Still, when I asked Bellona if they thought that the experience from onshore wind in Norway had an impact on how policy regulations would be offshore and the slow process was due to this, the answer was no. Bellona stated that they, unfortunately, believed that the government in Norway not had learned from the cases onshore, but what was rather affecting the time was internal political decisions concerning the oil and gas industry.

Sokoloski et al. (2028) determine the important role of the policymakers and how the policy affects the public discourse. In the case of Utsira North, there is little resistance, so one could say that policymakers have successfully affected the region. On the other hand, there is no specific evidence for that, and when interviewing Utsira municipality they were worried that

they would be neglected by the national government as there have been no direct goods or compensations for them till now. In the triangle of social acceptance by Wüstenhagen et al. (2007), it is emphasized that at a national level there may be a socio-political acceptance, but at the regional level, the problem occurs. The reason that Utsira municipality has not achieved any compensation or goods is that Utsira North is offshore floating wind abroad the municipality's borders. On the other hand, the case of Utsira North is special due to the short distance to shore and therefore can maybe not be seen on or treated like other offshore projects further from shore. So that the government has proactively worked for social acceptance of Utsira North is hard to state, it rather seems like a coincidence that there is little resistance in the region.

Referring to the triangle of social acceptance by Wüstenhagen et al. (2007) the different dimensions of the triangle seem to be accomplished in the case of Utsira North. Even though it does not occur as the national government has worked directly to achieve any social acceptance. There is less resistance against offshore wind than onshore wind in Norway, which could affect the general socio-political understating. Still, the case of Utsira North does differ from other projects due to its' distance to shore something that should be considered. The municipality of Utsira has the advantage of the existing acceptance of wind power but is further working on how to maintain acceptance. Bjärstig et al. (2022) underline it as a conclusion that different small local actors should be convinced by the benefits for the society and environment, not only local politicians. This may be necessary to successfully establish large-scale wind farms and avoid conflicts (Bjärstig et al., 2022). This is something that seems to be accurate in the case of Utsira North, that the potential advantages the wind farm could give the region also leaves social acceptance. But the same fundamental acceptance in the community cannot automatically be expected in other cases as Norway is continuing the development of new areas in the future.

## 7.2 Socioeconomics

The region of Haugaland is an industrial region, and as several of my interviewers stated, it is a region that is ready for a new industrial adventure. As emphasized in chapter three, the



region is known for its supply of technology for the oil and gas sector which could be essential in the construction of floating wind (Gram & Antonsen, 2021; Karmsund Havn, 2021; NHO Rogaland, n.d.). Further, the demonstrated examples from chapter three illustrate how the region is used to follow market demands that provide changes in technology and innovation. This was also something that was emphasized by my interviewers and that therefore the region would get advantages due to Utsira North.

It is hard to speculate on what socioeconomic impact Utsira North will have on the region as it depends on the outcome. According to the analysis done by Erraia et al. (2020), the opportunities for economic growth in social and industrial contexts are great. According to the business manager of Karmøy municipality, the socioeconomic outcome would be important for the further development of the region. The business manager further stated that there was a need that more women started working full-time and in more varied jobs. The business developer from Haugaland Growth stated that they were working on ensuring the value of Utsira North to the region. On the other hand, it was stated by Norcable that the outcome will depend on the developer's choice of suppliers which again are affected by price. It was also underlined that it is unrealistic to believe that the local industry companies are chosen in favor of international companies due to sustainable choices such as transportation, as developers are forced to take economical choices.

The study by Glasson et al. (2022) finds that there is a possibility of increasing employment during the construction time of offshore wind, further they determine that offshore wind farms often are established far offshore, and therefore there is little focus on the socioeconomic effects from the developers. This may differ in the case of Utsira North, due to its' close distance to shore. In my interviews with developers, they underlined it as important for them to conduct the region's potential industry, as they believed that this could be some of the criteria in the unreleased quality guide. In Scotland this is the case, the allocations were based on that the developers could ensure the use of national or local suppliers in the supply chain (Glasson et al. (2022). If Norway chooses similar critiques for their quality guide the economic impacts can easily be calculated, the social impact on the other hand is harder to forecast, and Glasson et al. (2022) underlined the importance to monitor this along the way as

large-scale wind farms are being settled to know the actual impact. Alem et al. (2020) state the same, that the socioeconomics impact should be measured compared to post wind farm due to lack of evidence on how the socioeconomic impact will be in a long-term perspective. Further, Alem et al. (2020) also find that housing prices will be less affected if the wind farms are placed forty kilometers or more from shore. If areas close to wind farms are less attractive Utsira municipality may experience the opposite of their wish. Utsira North will only be seven kilometers from Utsira, and in the interviews, the municipality hoped that Utsira North would provide some new jobs on the island that also would give some new citizens (Utsira Kommune, n.d.-a). Still, due to the lack of evidence of long-term effects these impacts are not finally confirmed yet.

Several of the interviewees underlined that the developers are getting impatient, Norcable stated that the time-consuming work of the government may affect the willingness of developers to invest in Utsira North. Further, it was a worry that the park not being fully scaled up from start may affect the prices, and thereby local suppliers may lose price competition to international suppliers. Considering these statements from the interviews it seems as if the slow progression of the government may affect the developers' willingness to invest in Utsira North. In other words, the time-consuming work of the government could decrease the chances of the great socioeconomic effects that have been forecasted. Both the social acceptance and socioeconomics are strongly related to political regulations that have the executive power, therefore in the next section, the political regulations will be discussed.

### 7.3 Political regulations

So far, the regulations and laws in Norway concerning offshore wind are still unclear. The study of Liljenfeldt (2015) suggested that the time pressure national authorities are under has affected a more effective use of top-down methods for planning onshore wind farms in Norway. Regional planning for onshore wind differs from offshore wind planning, and the top-down approach used onshore may have impacted the efficiency as Liljenfeldt (2015) underlines. Concerning offshore wind development, the top-down approach has not been conducted and there are reasons to believe that this is due to the experience of onshore planning in Norway,

despite that Bellona abdicated this. Planning for offshore wind may ease the conflict for regional planning as there are no regulated plans in the sea in the same way as onshore. But that does not mean that the areas offshore a conflict-free.

The case of Utsira North is an area of low conflict as former sections have found, but there are other issues of concern. Developers, fishers, and the municipalities stated their concerns about cables to shore, and if there should be a transformer station on Utsira. The indirect effects of offshore planning on regional planning may be an area of conflict for governmental institutions. The Ministry of Petroleum and Energy declared in 2021 that there was a need to determine, among other things, problems concerning the power grid (Olje- og energidepartementet, 2021e). Wiczorek et al. (2013) emphasize issues concerning the power grid are not only technical but also institutional. It seems like the lack of properly developed laws and regulations could be a factor in delaying the process of offshore wind in Norway. These frameworks are necessary to establish before the licenses can be allocated. Still, offshore wind was first elaborated by the government in 2006, so should not the institutional framework be more ready (NVE, 2022)? It may occur like it is not until recent years the government actually has started working on the institutional framework of offshore wind.

An example of processes that could have been started earlier is the cooperation forum. The Government of Solberg held one cooperation meeting in 2021 before the government resigned (Olje- og energidepartementet, 2021c). Something that has not been repeated afterward, but since the offshore wind was first planned for in 2006, could there not have been held any forums ten years ago that would have been well established by now? Sokoloski et al. (2018) suggest that there should be developed political procedures that allowed several perspectives to be heard by decision-makers in the development process. The Norwegian cooperation forum has been hosted once and may seem similar to the “Community of Practice North Sea” in the Netherlands (Steins et al., 2021). On the other hand, Steins et al. (2021) underlined that decoupling politics and policy from the practice had great potential as a tool for salient resource multi-use practices. While in Norway the cooperation forum is a political initiative that has not become a well-established forum yet, whereas the Norwegian Fishery Organization stated in their interview they had not felt heard.

The literature review refers to the oil and gas industry, as a big business, that has affected the development of offshore wind in Norway. This is similar to onshore wind in Norway where Vasstrøm and Lysgård (2021) found that business-minded developers had an essential impact on Norwegian energy policy onshore. The oil and gas industry does hold much knowledge of technology that is also used in offshore wind, and many of today's offshore wind companies can be traced back to the petroleum sector (Mäkitie et al., 2019). Therefore, there are assumptions to believe that the oil and gas sector has an influence on decision-makers. The study of Mäkitie et al. (2019) confirms that the fluctuating prices of oil and gas correlate with the years of investments offshore. However, van der Loos et al. (2021) determine that in Norway it is the political landscape that is the gatekeeper of the establishment, and the ruling government's energy policy affects the development. In my interview with Norwegian Offshore Wind, it was said that the new government may need time to be introduced to where in the process Norway finds itself concerning offshore wind. So, considering the government to be the gatekeeper of the establishment, the slow process of development is maybe affected by shifting ruling governments. In other words, a shifting government may decrease the efficiency of offshore wind in Norway and the work of relevant governmental institutions. Concerning the issues of the power grid, Wieczorek et al. (2013) suggest that a more holistic approach should be conducted in Europe rather than national planning, and further suggest that this also could be the approach of several institutional regulations of offshore wind.

By conducting the MLP to describe Utsira North, the accurate state may be that the niche technology for floating offshore wind is under development, and since it is an area where Norway has a lot of experience in the oil and gas sector, the pressure on the social-technical regime increases (Mäkitie et al., 2019). The landscape developments consist of the oil and gas industry, which puts pressure on the sociotechnical regime as well but has so far been varying affected by oil prices (Mäkite et al, 2019). In the socio-technical regime, the window starts to open, as there is a social acceptance but there is still a lack of sectoral policy and infrastructure that may affect the slow progression as several of my interviewers mentioned. According to the MLP, it is first when the new technology has made through the window of opportunity that the transition is completed (Geels, 2002).

A way to better understand how transitions are affected by the policy is the MSA. In the case of offshore wind in Norway, offshore wind has reached the political agenda due to the problem streams of the need for renewable energy sources, as stated by the UN, but the process of offshore wind can be traced back to 2006 (NVE, 2022; United Nations, 2015). The case of Oslo demonstrates that transitions take time as shore power had been discussed for ten years before it was installed (Bjerkan & Seter, 2021). This can also be relatable to offshore wind, even though it has been on the political agenda for a while now, it is estimated that the first wind turbine at Utsira North will be up and running in ten years (Øvrebø, 2022). Concerning shore power in Oslo collaboration between business and political regulations managed to offer a clear policy stream due to the advantages shore power provided (Bjerkan & Seter, 2021). When it comes to offshore wind in Norway, too many factors concerning the framework are still uncertain, which may affect that there is no clear policy stream yet. At the same time, in the region of Utsira North, it was stated a common understanding that the wind farm will promote several positive effects on the region that may give a local policy stream. What differs from shore power to offshore wind may be that there are several solutions to renewable energy sources than offshore wind, and therefore the policy stream may not occur as straightforward.

## 8. Results

From my discussion, I was inspired to create a model that better demonstrated my results on what factors influenced the development of Utsira North. Through my findings, it was stated that the socioeconomic effect on the region could be great and that there is a social acceptance in the region, but there is a lack of completed frameworks from the government.

According to the MLP, the socio-technical landscape consisting of policy and social acceptance was decisive for the window of opportunity, as well as the pressure from the technological landscape (Geels, 2002). Combining these factors with the social acceptance triangle by Wüstenhagen (2007), which shows how political, community, and market acceptance all influence each other, enrichen the understanding of how policy and business affect the transition. Further, the MSA determines what streams that affect the policy outcome. Out of this, I created a “window of opportunity” determined by the factors of; social acceptance,

market willingness, and political regulations who all influence each other. All factors must be fulfilled if the offshore wind should successfully enter the window of opportunity and thereby give socioeconomic advances.

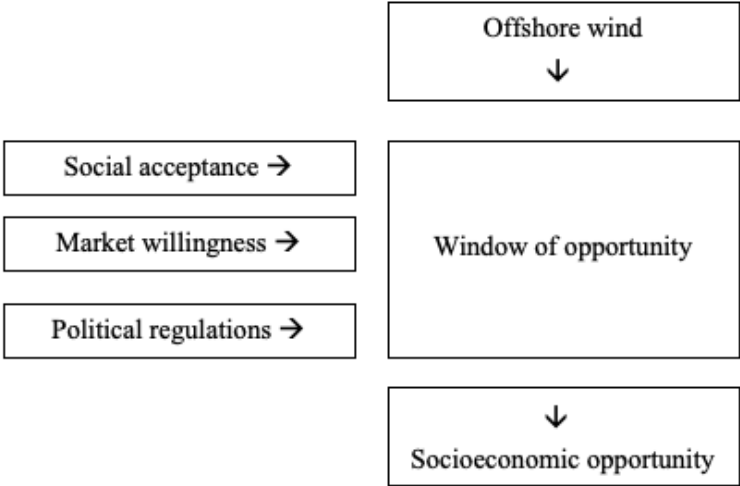


Figure 5: Illustrating results

The first factor is social acceptance. It was clear from my findings that Utsira North had local social acceptance, and even though some research showed that this had a low impact on the outcome it still could have a delaying effect. Well, in the case of Utsira North lack of social acceptance was not the reason for the slow development. The second factor is the market’s willingness to invest and develop. Several energy companies are ready to involve in offshore wind. In my interview developers and industries are getting impatient and want to start applying for licenses. What they are waiting for is the third factor, political regulations which now become the gatekeeper for the window of opportunity to open for offshore wind that will provide socioeconomic opportunities for the region of Utsira North.

## 9. Conclusion

In this thesis, I have analyzed several actors that may be affected by Utsira North and factors that may affect the speed of the progression of the development. My discussion suggests

that multiple factors determine the energy transition, but, in the end, it is the political regulations that have the power to make things happen.

The political regulations often seem to be affected by market willingness and, to some extent, social acceptance. In Norway, I found that the oil and gas sector does have an impact on the development of offshore wind and that there may be a lack of transparency in this collaboration. Despite this, offshore wind has been on the political agenda since 2006 and therefore a framework for offshore wind should somehow be more prepared than what it occurs. The communities surrounding Utsira North state themselves more than ready to host the wind farm, and the socioeconomic goods for the region are estimated to be great. Therefore, the region is starting to be impatient as well as they are waiting for the government's decisions on issues concerning the power grid and cables to shore. The developers as well are impatient and waiting for the quality guide before they will apply for licenses.

The social resistance to offshore wind in Norway is low compared to onshore. Still, I found that social resistance does not have too much power except for delaying processes. In the case of Utsira North, there seemed to be a high degree of social acceptance. So, if the circumstances of social acceptance and market willingness are fulfilled, a window of opportunity is opened where the government must be ready to react to achieve the potential socioeconomic advantages. In Norway, it seems as if the government works on offshore wind should have started earlier on. There is a lack of frameworks and regulations regarding offshore wind and now there is time pressure from multiple actors.

## 9.1 Further research

Based on the results from this thesis, I suggest that further research should take a deeper look into whether my findings from Utsira North and its effect on the region could be recognizable in other offshore wind cases close to shore. Also, more research should be done on the effect shifting ruling government has on energy policy and offshore wind development. As my research lacks the participation of several government institutions and the government itself, it would be interesting with a study that included these decision-makers' views.

Conducting qualitative research on these circumstances could enrich what consequences are evaluated and if this is transparent information available for the public.

Another suggestion for further research is to study the circumstances before, during, and after the construction to see if the stance on Utsira North remains the same. In the aftermath of Utsira North, it would be suitable to do research that studies if the forecasted outcome of Utsira North is as expected and what socioeconomics effect it has provided the region. There is much research on onshore wind, but as the offshore wind keeps expanding, more research should be done on offshore wind farms.



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