

Marte Austenå

# Wind Power on Frøya:

## From Controversy to Decision-Making

Master's thesis in Science and Technology Studies (STS)

Supervisor: Govert Valkenburg

Co-supervisor: Sara Heidenreich

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Norwegian University of Science and Technology

Faculty of Humanities

Department of Interdisciplinary Studies of Culture



Kunnskap for en bedre verden



## Læringsutbytte

En student som har fullført masterprogrammet i Studier av kunnskap, teknologi og samfunn ved institutt for tverrfaglige kulturstudier ved NTNU, forventes å ha oppnådd følgende læringsutbytte, definert i kunnskap, ferdigheter og generell kompetanse:

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- selvstendig vurdere og bruke ulike framgangsmåter for å bidra til innovasjon og nyskaping på en bevisst og samfunnsetisk måte
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- utføre avansert kunnskapsmekling i forbindelse med tverrfaglige prosjekter og prosesser



## Abstract

This master's thesis investigates the wind farm controversy and decision-making on Frøya in Trøndelag in Mid-Norway. Wind power has become a controversial energy source. From being perceived as a positive contribution to combat climate change, wind power has increasingly been perceived as a technology that destroys nature and kills birds. On Frøya, the wind farm controversy has divided the local community and led to protests and vandalism that required police intervention. The conflict between making renewable energy and preserving pristine nature makes the controversy in Frøya interesting to investigate. How can people want an energy transition to renewable sources and at the same time fight against wind farms?

In this thesis, I use STS literature engaging with Public Engagement to study how the inhabitants of Frøya have experienced the wind farm controversy and decision-making. To analyse the ten semi-structured interviews that make up the empirical material for this thesis, I have developed a theoretical framework with four dimensions: relevant social groups, arenas, types of knowledge and concepts of nature. These dimensions are used to analyse different aspects of controversies and decision-making based on the publics engagement in these processes.

I show in the thesis that the different worldviews that people have related to nature have affected their position in the wind power debate on Frøya. The different arenas used by the relevant social groups in the controversy and decision-making attempt to impact the decision-making, with varying degrees of success. Also, what happens in the different decision-making arenas influences how fair the relevant social groups perceive the process. How the arenas in the controversy and decision-making process include and exclude different worldviews, relevant social groups, and types of knowledge also affect how the actors perceive fairness in the process.

## Sammendrag

Denne masteroppgaven undersøker vindkraftkontroversen og -beslutningstakingen på Frøya i Trøndelag i Midt-Norge. Vindkraft har blitt en kontroversiell energi kilde. Fra å bli oppfattet som et positivt bidrag i kampen mot klimaendringer, har vindkraft i økende grad blitt oppfattet som en teknologi som ødelegger natur og tar liv av fugler. På Frøya har vindkraftkontroversen delt lokalsamfunnet, og den har ført til protester og vandalisering som har krevd involvering av politiet. Konflikten mellom å lage fornybar energi og bevare uberørt nature gjør kontroversen på Frøya interessant å undersøke. Hvordan kan folk ønske en energiomstilling til fornybare kilder, og på samme tid kjempe mot vindkraftverk?

I denne masteroppgaven bruker jeg STS-litteratur knyttet til Public Engagement for å undersøke hvordan innbyggerne på Frøya har opplevd vindkraftkontroversen og -beslutningstakingen. For å analysere de ti semistrukturerte intervjuene, som utgjør det empiriske datamaterialet for denne masteroppgaven, har jeg utviklet et teoretisk rammeverk med fire dimensjoner: relevante sosiale grupper, arenaer, typer kunnskap og forestillinger om natur. Disse dimensjonene er brukt til å analysere forskjellige aspekter av kontroversen og beslutningstakingen basert på engasjement fra sivilsamfunnet i disse prosessene.

Jeg viser i denne masteroppgaven at de måtene å oppfatte verden på, som folk har relatert til naturen, har påvirket deres posisjon i vindkraftdebatten på Frøya. De forskjellige arenaene, som blir brukt av aktørene i kontroversen og beslutningstakingen forsøker å ha en innvirkning på beslutningsprosessen, men med varierende grad av suksess. I tillegg påvirker det som skjer i de forskjellige beslutningstakingsarenaene hvor rettferdig de relevante sosiale gruppene oppfatter prosessen. Hvordan arenaene i kontroversen og beslutningsprosessen inkluderer og ekskluderer forskjellige verdensoppfatninger, relevante sosiale grupper og typer kunnskap påvirker også hvordan aktørene oppfatter rettferdigheten i prosessen.



## Acknowledgements

The last five years as a student have taught me so much. When I first started on my journey as a student, I did not anticipate that my master's thesis would be about wind farms. Not only because my bachelor's degree is about something completely different, but because I did not know much about wind farms before I started writing this thesis.

First, I would like to thank my informants for sharing your thoughts, ideas, and experiences from the wind farm controversy on Frøya. Thank you for opening up to me about a topic that is so close and personal for many of you. Without you, this thesis would not have been the same. Thank you, Marius Korsnes, for letting me join you on the field trip to Frøya. I learned so much from joining you in the interviews.

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Thank you to my family for always supporting me, and a special thanks to my dad for all the proofreading you have done through my years as a student.

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*Marte Austenå*

*Trondheim, May 2022*



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# 1 The Frøya Controversy - between Nature and Renewable Energy

***"Demand that renewable energy is introduced now – at speed and at scale. [...] Choices made by countries now will make or break the commitment to 1.5 degrees."***

***António Guterres, United Nations Secretary-General*** <sup>1</sup>

Wind power is among the sources that will serve most significantly the need for renewable energy, which is needed to keep global warming below 1.5 degrees Celsius (Miljødirektoratet, 2021a). However, wind power affects the nature area surrounding the turbines. Due to their size, wind turbines need wide roads for transport, which destroys nature (Norges vassdrags- og energidirektorat, 2022a). On Frøya, in mid-Norway, we can see that some people are opposed to sacrificing nature to make renewable energy. The wind farm that was supposed to make 'clean' and renewable energy for Norway has turned into a controversy that has divided the local community. This thesis aims to investigate the wind farm controversy and decision-making on Frøya, leading to the construction of the wind farm in 2019. So, if we want to use wind power as a renewable energy source, then maybe Frøya can teach us something about how such controversies and decision-making work in practice.

Climate change is happening all over the earth and requires international cooperation to slow down. The United Nations' goal number 13 for sustainable development is to "take urgent action to combat climate change and its impacts" (United Nations, n.d.-a). At the same time, goal number 15 is to "sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss" (United Nations, n.d.-b). Wind power will contribute to not making the climate change worse, but at the same time, it will destroy nature and might contribute to biodiversity loss. On their website, the Norwegian government states that "some activities are good for the climate, but not for nature" (Klima- og miljødepartementet, 2021)<sup>2</sup>. The transition to more renewable energy may conflict with land use since the areas needed for renewable energy are not 'empty'. Therefore, the Norwegian government states that it is important to find a balance between having more renewable energy and at the same time considering and retaining the diversity of nature and existing ecosystems (Klima- og miljødepartementet, 2021; Miljødirektoratet, 2021b). To understand the wind farm controversy and decision-making, it is important to include both expertise-based knowledge and scientific knowledge. The complex considerations connected to nature and climate when deciding whether to build a wind farm also make the wind farm controversy and decision-making on Frøya interesting to investigate further.

## 1.1 Saving the World as a Public Engagement

The urgency of combating climate change also inspired people from the civil society to act. In 2018, the Swedish 15-year-old Greta Thunberg started a global movement for

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<sup>1</sup> United Nations. (2022, 4 April). *Secretary-General's video message on the launch of the third IPCC report*. <https://www.un.org/sg/en/content/sg/statement/2022-04-04/secretary-generals-video-message-the-launch-of-the-third-ipcc-report-scroll-down-for-languages>

<sup>2</sup> My translation

action against climate change through her school strikes. In the beginning, Thunberg was alone on her strikes, but they soon spread worldwide and got known as 'Fridays for Future'. Thunberg and her fellow strikers used social media to encourage other young people to join them through the hashtag #FridaysForFuture. The year after, Greta Thunberg held a speech at a United Nations meeting where she accused the politicians of not doing enough for the climate (Fridays For Future, n.d.-b; Garvik & Tjernshaugen, 2021).

One of the demands from Fridays for Future is to listen to the best science available (Fridays For Future, n.d.-a). As a result of the Fridays for Future protests, Scientists for Future was formed by scientists that supported the protests. Their goals are to inform about climate change and sustainable solutions, bring together scientists from different professions and provide research on the impacts of climate change on nature and humans (Scientist for Future International, n.d.-a). Scientist for Future and other scientist have clear answers to how to make a 'green transition'(Scientist for Future International, n.d.-b). Why does this not lead to straightforward implementations of their solutions?

The Fridays for Future strikes are examples of civil society organising to influence people in power positions to make a difference in the global climate. These strikes are made to create awareness about the urgency of acting to counter climate change. In other cases, like most wind farm controversies, the opponents fight to preserve nature and landscape. However, nature, land use, and climate are related. The Frøya wind farm controversy is an example of that. In May 2019, wind farm opponents on Frøya gathered in the wind farm construction area in an attempt to stop the construction. They tried to stop the building of the wind farm through actions of civil disobedience, even after the developers had gotten a licence from the government. The opponents did not feel heard in the decision-making and wanted to stop the construction physically (NTB, 2019).

## 1.2 Research Question

The Frøya wind farm controversy and decision-making functions as examples of the wind farm controversies that have made up the Norwegian wind power controversy. As in many other places, people at Frøya felt that they had little influence over their changed surroundings. There is a time lag in people's engagement as the planning is usually well underway when they first notice the planning of a wind farm. Members of civil society all have some expertise, but not necessarily the same university diplomas that people who work from governments and energy companies have. This makes the confrontation between them intricate. The wind farm controversy and decision-making on Frøya is also an example of the challenges that come with energy transitions when it is necessary to destroy nature to make renewable energy and save the world.

Studying knowledge in the public debate and decision-making processes is important to understand how the publics engage in decision-making processes regarding big, technological, and infrastructural projects. Studying the publics engagement in the wind farm controversies is important for understanding why the publics get involved and interested in the decision-making and how they perceive this process. In general, controversies will emerge when different parties have different interests that cannot be satisfied simultaneously. From the Frøya case, we can learn that it is hard to make all the actors experience fairness in the decision-making and controversy.

As mentioned, wind farms cannot contribute to both number 13 and 15 of the United Nations' sustainable goals (United Nations, n.d.-a). Therefore, it is important to find a balance between energy transition, protection of nature, and public involvement in the decision-making. The wind power controversy on Frøya is important because it is an example of how hard it is to weigh the benefits of rapid renewable energy development against the need for democratic, inclusive decision-making. As a democratic country, Norway must balance taking time and resources to include as many stakeholders as possible in the decision-making processes and making urgent decisions. Against this backdrop, the main research question for this thesis is:

- How did the controversy and the decision-making unfold, leading to the Frøya wind farm?

This overarching question will be further refined after I have provided an overview of the controversy and developed the theory in the following chapters.

### 1.3 Thesis Structure

This thesis consists of seven chapters. In this chapter, I have presented public engagement in climate changes, why I have chosen the wind farm situation on Frøya and the main research question for this thesis. The second chapter consists of the context for the thesis, the national policies for wind farm development in Norway, and an introduction to the licencing process for wind farms in Norway. In addition, I will give a historical overview of the wind farm on Frøya. In the third chapter, I shall present the theoretical framework I will use to answer the research questions. The theoretical approaches include four dimensions that I defined based on the literature on Public Engagement in Science. For example, one of the dimensions is conceptions of nature, which we have seen in this chapter have an important role in wind power controversies and decision-making. Chapter four is about the methodological considerations and choices I have made through working on this thesis. In chapter five, I will analyse the controversy on Frøya using the four dimensions from the theoretical framework. There I will present, for example, how the opponents used their Facebook group to gain access to the news media. In the sixth chapter, I focus on the decision-making process, including the licencing process and other arenas that actors attempted to use to influence this process. In the last chapter, I will summarise the two analysis chapters' findings and discuss the outlooks beyond the Frøya case.





## 2 Wind Power on Frøya – from Politics and Decision-Making to Referenda and Protests

This chapter aims to give context to the wind farm controversies in Norway and Frøya and present the research question. First, I will introduce the national policies for renewable energy and wind power and the technological development wind turbines have undergone since the 1980s. Secondly, I shall present the licencing process for wind power in Norway. In addition, I will present some of the critiques of the wind farm licencing process. Further, I will provide a chronological overview of the emerging wind power debate and wind farm development on Frøya. At the end of this chapter, I will summarise the challenges in the wind farm controversies and decision-making in Norway and on Frøya.

### 2.1 Wind Power in Norway

As of 2021, there are four main goals for the Norwegian Energy policy. Improving the energy supply security is one goal, and the second goal is to make energy use more efficient and climate-friendly. The last two goals are to facilitate making renewable energy more profitable and create value for Norway based on renewable energy resources (Energy Facts Norway, 2021). Only 7.5 per cent of the total energy production in Norway comes from wind power. The main part of the energy production comes from hydropower, which is described as the “backbone” of Norway’s energy supply (Energifakta Norge, 2021; Vasstrøm & Lysgård, 2021). The Norwegian government has also focused on the need for wind power in the transition to renewable energy through several white papers from the 1990s until 2020 (Meld. St. 25 (2015-2016); Meld. St. 28 (2019-2020); St.meld. nr. 29 (1998-99)). In a white paper from 2020, the government states that wind power “is among the sources of new, emission-free power production in Norway with the lowest development costs”<sup>3</sup> (Meld. St. 28 (2019-2020), p. 7).

Wind power in Norway is not new; in 1916, in Andøya, the first wind farm delivered power to 16 subscribers (Bye & Solli, 2007; Rosvold, 2019). Between 1916 and 1980, not many wind farms were built. In the 1980s, wind power was perceived as an environmentally friendly way to make energy, but it was also considered inefficient and unnecessary compared to the already existing hydropower. However, when more and more wind projects were planned in the 1990s, and it looked like wind power could have its breakthrough as an energy source in Norway, there were two main problems. The first problem was that it was not profitable to make wind energy, and the second problem was that the conflict between having ‘green’ energy and conserving nature got tenser (Bye & Solli, 2007). In 1999 the government’s goal was to build wind power that could produce 3 TWh each year (St.meld. nr. 29 (1998-99)). By the end of 2015, 25 wind farms in Norway produced 2,5 TWh in an average year, according to the white paper “Kraft til Endring” (Meld. St. 25 (2015-2016)).

In 2019 The Norwegian Water Resources and Energy Directorate (NVE) published a report called ‘Nasjonal ramme for vindkraft’ that translates to ‘National framework for wind power’. The report pointed at 13 areas in Norway that could be eligible for placing wind farms (Jakobsen et al., 2019). In addition, the report pointed to the development that has happened in wind turbine technology. Figure 1 shows that the wind turbines have increased in both heights and length of the rotor blades. Therefore, the effect of

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<sup>3</sup> My translation

energy that is possible to produce has increased. In addition, new technology has made it possible for wind turbines to create more power from the same wind (Jakobsen et al., 2019; Meld. St. 28 (2019-2020)).

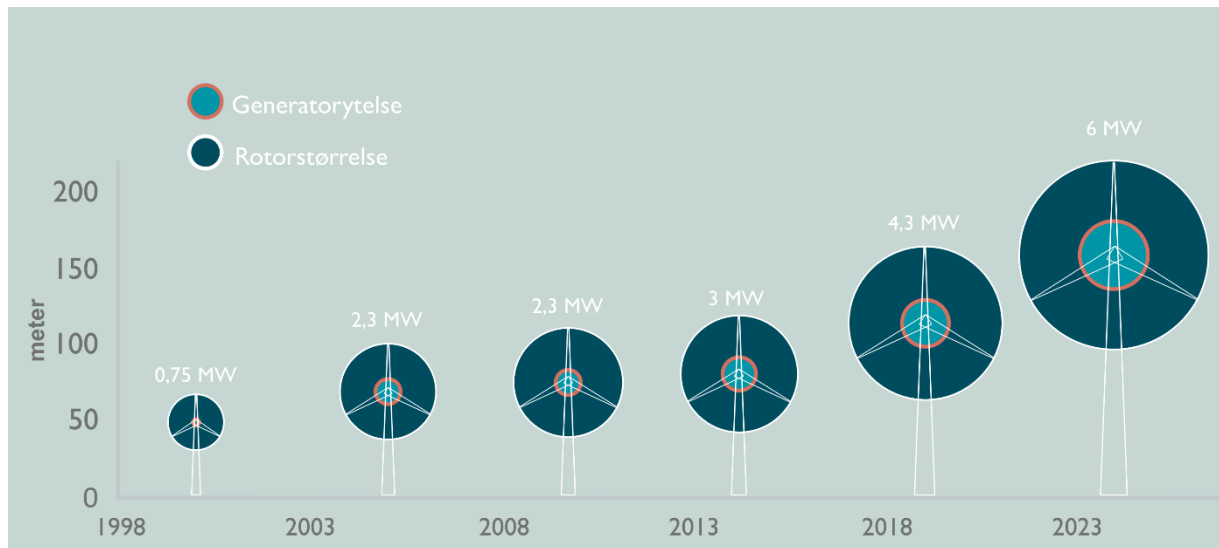


Figure 1: The development of the wind turbine sizes and performance. The turquoise circle shows the generator performance, and the dark blue circle indicates the size of the rotor blades. The 2023 wind turbine is based on estimates. Source: *Nasjonal ramme for vindkraft*, p. 15.

The goal for the report 'Nasjonal ramme for vindkraft' was to be conflict mitigating (Olje- og energidepartementet, 2019a). After the report received 5000 inputs to the hearing that mostly were negative, the government decided not to pursue the 13 areas mentioned in the report. In the same press release, the government presented that they had decided to start working on reviewing the licencing process (Olje- og energidepartementet, 2019a). The following section will move deeper into the subject of licences.

To sum up, energy made from wind power makes up only a fraction of the total Norwegian energy supply. The justification of wind power in the white papers is related to profiting from making wind power and contributing to the energy transition from fossil fuel to renewable energy. Due to technological development, wind turbines have increased in size and become more efficient than at the beginning of the 21<sup>st</sup> century. However, wind power has also gotten more controversial. The report 'Nasjonal ramme for vindkraft' presented suitable areas for wind power, but the government decided to abandon the report due to massive resistance.

## 2.2 Licences and the NVE

In Norway, The Norwegian Water Resources and Energy Directorate (NVE) is responsible for the licencing process for wind power projects that exceeds 1 MW. Projects that are between 1MW and 10MW undergo a simplified licencing process. However, most of the licence applications to the NVE exceed 10 MW and need to undergo a complete licencing process (Inderberg et al., 2019; Norges vassdrags- og energidirektorat, 2022b). This section will focus on licencing procedures for wind farms that exceed 10 MW because this is relevant for the wind farm on Frøya.

The official part of the licencing process consists of six steps. The first process is that the developers report that they are planning a wind farm and where they are planning it. The next step is to map the consequences of such construction. The licencing authorities NVE set the framework and directions for this mapping. Step number three is the actual application from the developers to the NVE. Based on the developer's documents, input from hearings, and NVE's knowledge, NVE decides whether the wind farm gets a licence. Step five makes it possible to send complaints processed by the OED (Norges vassdrags- og energidirektorat, 2022b). The sixth step is monitoring the licence. Before the construction work can begin, it is mandatory to make Environmental Impact Assessments (EIA). The EIAs are made to ensure that the wind turbines follow the Planning and Building Act (PBA) (Inderberg et al., 2019; Norges vassdrags- og energidirektorat, 2022b).

In 2016, many planned wind power projects were not built due to profitability. However, after 2016, a lot of the projects were finished. According to Vasstrøm et al. (2021), the local protests they have researched have been related to the licencing process being unpredictable and opaque for both inhabitants, developers and the municipalities (Vasstrøm et al., 2021). In 2020 the government decided that the licencing process should be changed. The white paper argued that wind power production had changed since 2016, when the last white paper was published (Meld. St. 28 (2019-2020)). The government wanted to have "stricter requirements for studies and a stronger emphasis on effects for landscape and environment, communities and neighbours"<sup>4</sup> (Meld. St. 28 (2019-2020), p. 6). In addition, the government wanted the licencing process to have a stricter deadline and that the wind farm projects should be better anchored in the local communities (Meld. St. 28 (2019-2020)).

When the government decided to not pursue the 13 areas from 'Nasjonal ramme for vindkraft', the licencing process for new projects was temporarily put on hold (Meld. St. 28 (2019-2020)). In March 2022, the NVE published a knowledge base about the known effects of wind farms on the environment and society. This is a collaboration between governmental organisations that have used the knowledge they had and updated it to make a joint knowledge base that the different governmental organisations agree about. This joint knowledge base was meant to give a better basis for further licencing processes where more of the responsibility was to be moved away from the NVE and over to the municipalities (Meld. St. 28 (2019-2020); NVE, 2022). In April 2022, the government decided to reopen the application process for new wind power projects where the municipalities have agreed to host the wind farms (Aasland, 2022).

The licencing process for wind farms in Norway for projects that exceed 10 MW consists of several stages and documents that the licencing authorities must approve. This process has been criticised for taking too long, being unpredictable, and not transparent enough for the inhabitants, developers, and municipalities. This is also related to the wind farm controversy on Frøya that I will present in the following section.

### 2.3 The Wind Farm on Frøya: A Historical Overview

The Frøya municipality is located in Trøndelag in the Mid-Norway. More than 5000 islets surround the main island in the municipality, and there are about 5000 inhabitants that live on Frøya municipality. Frøya and the island next to, Hitra, are a significant part of the salmon industry in Norway (Frøya kommune, 2022b). Salmon farming is the main

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<sup>4</sup> My translation

reason that Frøya is the second most profitable municipality in the Trøndelag region, only beaten by Trondheim (iLaks.no, 2018). The wind power debate on Frøya is one of many wind power controversies in Norway in 2019 that became more challenging and confrontational than before (Trana et al., 2019). Despite protests from parts of the local community, a wind farm was built on Frøya in 2019.

The process from the first plan of a wind farm on Frøya to the wind farm was finished took more than 15 years. In April 2002 the developers TrønderEnergi and Nord-Trønderlag Elektrisitetsverk (NTE) sent a notification to the Norwegian Water Resources and Energy Directorate (NVE) about wanting to build a wind farm on Frøya (Norges vassdrags- og energidirektorat, n.d.). In this notification, the developers wanted to build 63 wind turbines with 200 MW as a total effect. In 2004 the developers applied for a licence for this wind farm.

In 2005 Frøya municipality conducted a referendum where the inhabitants could advise the municipal council on whether they wanted the wind farm. In the referendum, 1177 people voted in favour of the wind farm, and 1114 voted against it. Later the same year, the municipal council voted to support the wind farm (Frøya kommune, 2022a). The same year, after TrønderEnergi and NTE sent the first application for a licence for the wind farm on Frøya, the municipal council decided that they would negotiate with the developers to get compensation for building the wind farm in their municipality. NVE requested that the developers investigate the impact on Eurasian eagle-owl, sea eagles, shadows, and the drinking water source on Frøya. In September 2005, TrønderEnergi and NTE sent it to the NVE, but seven years later, in 2012, the developers were still waiting for an answer from NVE (NTE Energi & TrønderEnergi, 2012).

In 2012, the application for changing the plan for the wind farm was sent to the NVE. In this new plan, the area where the wind farm was planned was reduced from 26.1 km<sup>2</sup> to 6.6 km<sup>2</sup> (NTE Energi & TrønderEnergi, 2012). The installed effect was also reduced to 60 MW, and the developers estimated that that would correspond to between 20 and 26 wind turbines (NTE Energi & TrønderEnergi, 2012). The same year the NVE approved the plans to build Frøya wind farm (Norges vassdrags- og energidirektorat, n.d.). Several organisations and individuals sent complaints to the NVE about this decision. Many of the complaints criticised that the wind farms were built in untouched nature and how the wind farm could affect outdoor life and local businesses (Solberg et al., 2019). The protests were sent to the OED to be reviewed, and in 2013 the OED affirmed the NVE's decision (Norges vassdrags- og energidirektorat, n.d.). Since the construction had not started in March 2016, the municipal council decided to extend the time limit TrønderEnergi had to build the wind farm three more years, until 7 April 2019 (NTB, 2019).

In January 2019, the wind farm on Frøya still was not constructed yet, but the developer TrønderEnergi had found a new investor for the wind farm on Frøya. the German company Stadtwerke München. This meant that the contraction could start (TrønderEnergi, 2019). The municipality also decided to have a second referendum at the beginning of April 2019 due to the increased engagement from the inhabitants in the wind farm controversy (Holstad, 2019; Rasmussen, 2019). According to Statistics Norway, 48.2 per cent of the inhabitants who were eligible to vote cast their votes. The referendum result was that almost 80 per cent voted against the wind farm (Statistisk sentralbyrå, 2020).

On 11 April 2019, the municipal council on Frøya tried to stop the wind farm construction by declaring the licence invalid because they claimed that the developer had not started the construction on 7 April 2019. On the other side, TrønderEnergi claimed that they had started the construction before the deadline (Ersfjord, 2019). In May 2019, the county governor revoke the decision, and TrønderEnergi could continue the construction (NTB, 2019). While the referendum was being planned, the NVE approved the EIA for the wind farm. Again, the NVE received complaints and sent the EIA over to the OED to review. This time Frøya municipality also sent a complaint to the NVE about the approval of the EIA. OED approved the EIA, but they imposed that the developer had to make changes like moving some of the turbines (Olje- og energidepartementet, 2019b).

Motvind Norge is a national wind power resistance group established due to the wind farm resistance in Norway having gotten louder since 2018. This was a way of uniting the wind farm resistance into one group (Motvind Norge, n.d.). However, the opposition is not new on Frøya, it had existed since 2002, when the first wind farm resistance group 'Perikum' was formed. The group later changed its name to 'Nei til vindkraftverk på Frøya' that translates to 'No wind farm on Frøya' (Grønskag, 2019). The resistance group has an open Facebook group with the same name. This Facebook group has several thousand members (Ersfjord, 2019).

The building of the wind farm has not been without protests. Opponents of the wind farm have tried to stop the construction and traffic along the road close to the construction area for several days (Ersfjord, 2019; NRK, n.d.). The construction area has also been troubled by masked people who broke into the wind farm construction area and covered the surveillance cameras, and there have been accusations of vandalism against one of the excavator in the construction area (NRK, n.d.; Nærø & Arnesen, 2019). However, the vandalism on the excavator is something that "Nei til vindkraftverk på Frøya" does not think has happened. The opponents see this as "fake news" (Lindebø & Silvola, 2019).

Despite the protest and the second referendum, the wind farm on Frøya was built in 2019 and in the autumn of 2020, the wind farm started to produce power. At the beginning of January 2021, the area surrounding the wind farm opened to the public (TrønderEnergi, n.d). From the first official plans, it took 18 years before the wind farm was finished. This is one of the things that the government wants to change in the new guidelines for the licencing process.

## 2.4 Challenges in the Wind Power Debate

Based on the information presented in this chapter, I have defined four areas of conflict which applies to the Frøya wind power debate. As we can see from the chapter, some areas have led to conflict since the first wind farms were planned in the late 1990s and early 2000s:

- Conflict regarding the fairness of the licencing process
- Disagreement about whether wind power is needed
- Conflict regarding loss of local nature areas versus fighting the global climate crisis
- Different arenas for participation in the debate and decision-making that do not necessarily communicate/interact

I will focus on these four conflict lines for the rest of the thesis. In the next chapter, I shall present the theoretical framework that I will use to develop a set of specific research questions and organise the empirical material. To do this, I will use the

theoretical approach called Public Engagement from Science and Technology Studies as basis to analyse the data material. In addition, I will use several pieces from other theoretical frameworks from the STS field to make a theoretical framework that fits the data material I have collected.

### 3 Theoretical Framework

The theoretical framework for this thesis draws on the literature on public engagement. Based on the four conflict lines related to the wind farm on Frøya, that I defined in the previous chapter, I developed a theoretical framework with four dimensions that will help me make sense of the controversy and help to order the empirical material. The four dimensions are based on former research and theory from Science and Technology Studies. The first dimension is 'relevant social groups', from the Social Construction of Technology (SCOT), where I will problematise the different roles and power relations of the actors in the controversy and decision-making (Pinch & Bijker, 2012). For example, relevant social groups have varying degrees of impact on the licencing process and, therefore, the result. 'Arenas' is the second dimension, where I will present the role of the arenas, a site where public engagement in controversies and decision-making happens. For example, the arena of public debate has very different participants and different rules of engagement than the arena of municipal policymaking. The third dimension is 'types of knowledge'. Different types of knowledge could be valued differently in various arenas and are used to argue for the actors' opinions in the wind farm controversy and decision-making. 'Concepts of nature' is the fourth dimension and can help direct attention to how people perceive nature differently and how they understand the impact wind power has on nature.

First, I will introduce the research field of Science and Technology Studies (STS) and the development of the research area called Public Engagement. After I will present the four dimensions of the theoretical framework. In the last section of this chapter, I will revisit and further refine the research questions for this thesis.

#### 3.1 Science and Technology Studies and Public Engagement

According to Tomas Moe Skjølsvold (2015), STS researches the relation between technology and society, culture and social processes, and how these components affect each other. STS has, through empirical studies, shown that it is important to understand society in the understanding of science and technology (Skjølsvold, 2015).

Science and Technology Studies have contributed with critical perspectives on how the publics understand scientific development. This part of the STS field is called *Public Understanding of Science*. One of the leading research theories in the 1960s and 1970s was that if people were educated and had access to the proper knowledge, they would change their perspective and attitude towards science and technology. This view, known as the deficit model of public knowledge, also led to the thinking that to make people more positive towards the development, they must have more and proper knowledge (Skjølsvold, 2015). This view is connected to technology determinism, where "the technology has certain effects we humans can do little about"<sup>5</sup> (Skjølsvold, 2015, pp. 36-37). The deficit model builds on the idea that ordinary people are deficient either through lack of knowledge or having only their own interests and not the society's interests in mind. People are conceptualised as passive within the model, and the idea behind it is that the lack of knowledge makes their opinions not worth listening to for in decision-making processes (Collins & Evans, 2002; Skjølsvold, 2015).

Related to the deficit model of publics is the Not In My Back Yard (NIMBY) concept which has been used to explain the resistance to certain types of technology based on location.

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<sup>5</sup> My translation

The concept of NIMBY will, in a wind power context, mean that wind power opponents are only opposed to the wind farms because it is in their local area. In other words, the opponents are believed to have a deficit where they only care about themselves and their local area. Therefore, their opinions are not valued in the debate. Aitken (2009) has criticised this way of using NIMBY to explain the opposition against wind farms because NIMBY “presume that individuals opposing particular wind power developments would ordinarily be supportive of wind power as a general concept” (Aitken, 2009, p. 1836). In other words, NIMBY presumes that the opponents of wind farms do not want the wind farm in their local area but are okay with having them elsewhere. This denies the possibility that people may have legitimate reasons for opposing wind power in their local area, while they have no objection against wind power in a general sense. Warren et al. (2005) also oppose using NIMBY to explain resistance to wind farms. They claim that despite that some parts of the NIMBY attitude are present in the debate, they have done studies that showed “an ‘inverse NIMBY’ syndrome, whereby those with windfarms in their ‘backyard’ strongly support the technology” (Warren et al., 2005, p. 853). This means that there are many different and valid reasons to oppose wind farms in your local area. It is usually not because people are selfish. The STS research field has been critical to the deficit model of public knowledge (Skjølsvold, 2015). The problem with the deficit model is that it has a blind spot, so to say, for knowledge that is valuable yet just differently produced than scientific knowledge.

The literature that engages with Public Engagement with Science has developed as a response to criticism of the Public Understanding of Science, and the deficit model and NIMBY’s way of conceptualising the publics. In Public Engagement, the focus has switched from the publics’ knowledge deficit to a perception that the people understood the knowledge but interpreted it in their own context (Skjølsvold, 2015). In other words, people understand knowledge differently depending on their views and values. Despite some differences, Public Engagement is often used as a synonym for Public Participation. For example, public engagement can be used more broadly than Public Participation (Rowe & Frewer, 2005). Public Participation is defined by Bucchi and Neresini (2008) as “the diversified set of situations and activities, more or less spontaneous, organized and structured, whereby nonexperts become involved, and provide their own input to, agenda setting, decision-making, policy forming, and knowledge production processes regarding science” (Bucchi & Neresini, 2008, p. 449). Therefore, Public Participation and Public Engagement can be understood as several different ways of providing input to controversy and decision-making. Rowe and Frewer (2005) argue that Public Participation is a part of Public Engagement. According to them, Public Engagement also consists of the publics getting involved in a debate without any structure or exchange of information like the explanations above (Rowe & Frewer, 2005).

When the publics is involved in decision-making and controversy, it is important to consider relevant social groups, arenas for public engagement, and what type of knowledge is included and excluded in the debate and decision-making. To understand why the publics engage in the wind power controversy and decision-making, it is important to investigate their perceptions of nature. As shown in chapter 1 and 2 nature plays a central role in wind power controversies. The following four sections will present these four dimensions of understanding public engagement in wind power debates.



### 3.2 Relevant Social Groups

'The publics' consists of many different people with different knowledge and professions. To understand the conflicts concerning wind power, it is important to understand the diversity and heterogeneity of the publics and the variety of activities they engage in. Like in the theoretical approach 'Social Construction of Technology' (SCOT), I identify several relevant social groups in wind power controversies. The relevant social groups include both institution, organisations, and individuals, regardless of whether they have organised as a group or not. According to Pinch and Bijker (2012), the defining element for relevant social groups is that all the members of the group "share the same set of meanings, attached to a specific artifact" (Pinch & Bijker, 2012, p. 23). In this thesis, I have divided the informants into the following three relevant social groups: 'oppose to save nature', 'support to benefit from nature', and 'oppose and save energy'. More details on the relevant social groups are presented in chapter 5.1.

The NVE are responsible for ensuring that all relevant stakeholders in every licence application are included. Different power relations between the relevant social groups make it challenging (Inderberg et al., 2019). Inderberg et al. (2019) claim that "... uneven access to information and influence on the outcome, the asymmetric relationship of the licensing authority relative to actors outside the energy sector, and changes in the PBA have all led to today's process, which favours the influence of pro-windpower groups" (Inderberg et al., 2019, p. 189). The differences between the stakeholders make the licencing process feel unfair for some of the relevant social groups. According to Inderberg et al. (2019), the licencing process that has been used up until now has favoured groups that want wind farms to be built (Inderberg et al., 2019).

To understand the wind power debate, it is important to determine what groups are relevant in the controversy and their opinions and engagement with the wind farm. Further, understanding the relationship between the actors in the wind power controversy is important to understanding why wind power is controversial. The unfairness in the licencing process that Inderberg et al. (2019) describe, where the relations between the actors are asymmetrical, could lead to exclusion from vital arenas for public engagement. In the next section, I will discuss the importance of the arenas and inclusion and exclusion from them.

### 3.3 Arenas for Public Engagement and Decision-Making

To analyse the empirical material, I need a theoretical dimension that describes a site where the engagement happens. I call these sites arenas. I assume that not all relevant social groups are involved in all arenas and that the arenas have various conditions for engagement. Further, I will present how previous research describes arenas.

Brian Wynne (2003) uses the term 'public arena' to describe a place or a possibility where the publics can participate in decision-making (Wynne, 2003). In the wind power controversy and decision-making, different arenas for public engagement are used to interact with other actors. These arenas could be places where the publics meet the government or others responsible for the decision-making processes to discuss and express their opinion on different topics, like hearings and referenda. Other arenas are used to express views and enrol people.

The "asymmetric relationship" that Inderberg et al. (2019) describe in wind power controversies also leads to exclusion from arenas in the licencing process. Even though the NVE tries to include different groups in the decision-making processes, the actors not

in the energy sector are less likely to be heard (Inderberg et al., 2019). According to Saglie, Inderberg & Rognstad (2020), municipalities feel left out, especially from the process with the EIA.

The different arenas include and exclude relevant social groups that have a variety of power relations. Stevienna de Saille (2014) argue that an 'unruly public' as a concept functions to "disinvite those whose response is unwanted or unpredictable, while still appearing to be engaging with 'the publics' as a whole" (de Saille, 2014, p. 99). Making a part of the publics appear 'unruly' makes it easier for the government and the policymakers to not take the opinions of that part of the publics into account.

Some of the arenas are recognised as more legitimate by decision-makers and therefore have more influence in decision-making. In the Frøya controversy, the public hearings connected to the wind farm licencing are an example. Another arena that is not recognised as equally legitimate by the decision-makers is the Facebook groups organised by wind farm opponents on Frøya. These types of variation between the arenas make arenas an interesting dimension to include. The different arenas have different characteristics and mechanisms for inclusion and exclusion.

Arenas are a relevant dimension to discuss in this thesis because several arenas are used to engage with the wind power controversy and decision-making. In the different arenas, there are various conditions where the opinions are discussed, and the arenas have different degrees of impact on the decision-making. Some arenas have little or no connection and co-exist with little or no interaction. Therefore, it is important to research not only the arenas that have an impact on the decision-making but also other arenas to understand the controversy.

### 3.4 Types of Knowledge

Collins and Evans (2002) raise the question: "Should the political legitimacy of technical decisions in the publics domain be maximised by referring them to the widest democratic processes, or should such decisions be based on the best expert advice?" (Collins & Evans, 2002, pp. 235 - 236). This is an important question when dealing with decision-making processes and knowledge. Whose opinions and what kind of knowledge is accepted and considered in decision-making?

According to Bertou and Pastorellia (2017), some worldviews argue that experts and specialists should decide on decision-making processes. One of these worldviews is the technocratic worldview, where experts have power in political decision-making processes (Bertou & Pastorellia, 2017). Another view is the 'folk wisdom' that "claim[s] that ordinary people are wiser than experts in some technical areas" (Collins & Evans, 2007, p. 5). These two points of view could be seen as the opposites of what kind of knowledge should rule the world. Between these two opposites, there is a diversity of views of different types of knowledge.

Brian Wynne (1992) has written a paper on the Chernobyl disaster and what it meant to the hill sheep farmers in Cumbria in England. In this paper, Wynne uses 'laypeople' to describe the farmers. I understand that that is a problematic term because it implies that the knowledge from others than people with academic education in the specific field cannot be experts. Therefore, I will not use it. After the Chernobyl disaster, the radiation was brought to England due to the weather and ended up in the ecosystem and inside the sheep. For example, the scientific knowledge the farmers got of feeding the sheep with a particular type of grass that was very expensive. At the same time, income from

the sheep was dramatically low, and the lowland farmers made a lot of money from buying sheep from the hill farmers and selling them after they had been decontaminated in the lowland farms. The hill farmers did not follow the advice from the scientist, but Wynne argues that this was not due to the farmers' lack of knowledge. The scientists had ignored the knowledge the hill farmers had about the local environments and farming on the hills. It was, for example, difficult to make sure that the flock of sheep ate the recommended grass, and it was challenging to gather the sheep for testing as the scientific advice suggested (Skjølsvold, 2015; Wynne, 1992).

The scientists' advice is necessarily incomplete because special conditions like local variations can make a difference in the result, like in the hill farmers' case. Jasanoff (2018) makes a similar point in her critique of the energy policy debates because "...we have delegated the tasks of observation and analysis to expert communities without challenging their framing assumptions and even the values that guide their methodological choices" (Jasanoff, 2018, p. 14). Jasanoff argues that it is not a good idea that experts can go without having their research criticised. Just because they are experts in a specific field, it does not mean that they know everything that can affect the outcome, like local differences.

Looking at the use of different types of knowledge in decision-making and controversy can contribute to understand why some types of knowledge are accepted while others are not. In addition, it is critical to know that knowledge does not necessarily mean knowledge made by academics but also can include knowledge passed from generation to generation about living in balance with nature. Different types of knowledge have a different impact on opponents, proponents, and decision-making. Therefore, it is vital to include types of knowledge as a dimension in this theoretical framework.

### 3.5 Concepts of Nature

Nature has a central role in the debates surrounding wind farms. Different concepts and perceptions of nature lead to different values and opinions about new technology, such as wind turbines (Asveld & Stemerding, 2016). Concepts of nature have been described differently by various researchers. In this section, I will explain two exemplary concepts of nature that recur in the Frøya debate: the idea of nature as a resource and the idea of nature as vulnerable.

The idea of nature as a resource holds that the value of nature is primarily in the (economic) benefit that it offers to people and societies. This is a worldview where the actors do not see a need for solid regulations for exploiting nature. In the nature as resource view the nature is run by market forces logic where the market controls the way nature is used as a resource in connection to demand and supply (Asveld & Stemerding, 2016). If nature as a resource concept is taken too far, nature is considered as a resource with no limits to human intervention (Castree & Braun, 1998).

The other concept of nature is nature as something pristine that needs to be protected from humans (Castree & Braun, 1998). According to Asveld and Stemerding, in this worldview technology could pose a risk to nature and might pose uncontrollable and irreversible risks. Therefore, regulations must be bound by a social and legal framework to be beneficial according to this concept of nature (Asveld & Stemerding, 2016). This world view is driven by the civic society logic where the actors in this view "have a strong preference for local economies" (Asveld & Stemerding, 2016, p. 20).

While Castree and Braun (1998) only include these two concepts of nature in their paper, Asveld and Stemerding (2016) also describe two other perceptions of nature – controlled nature and irrelevant nature - but these are not found in the empirical material in this thesis and are therefore left out (Asveld & Stemerding, 2016).

A challenge with these concepts of nature by both Asveld and Stemerding and Castree and Braun is that they relate to nature as a whole and not just parts of it. Instead, I would claim that one could see one part of nature as a resource and another part as vulnerable. This is also a reason for studying a controversy because, in controversy, you can see that it is not enough to talk about nature in the universal sense. The nuances between what a person could care about a part of nature and not about another part of nature are weaknesses in their conceptions of nature that I will discuss further in chapters 1 and 0.

In the wind power debate, there are not only conflicts between different concepts or perceptions of nature, but also within one concept of nature, there could be conflicts. Previous research on wind power controversies has shown that both opponents and proponents use arguments based on nature. Bye and Solli (2007) argue that the Norwegian wind power development had argued on behalf of nature on both sides of the debate. On one side, people were fighting to build wind farms to make renewable energy, mitigate climate change and hence protect nature, and others were fighting to protect nature from encroachment (Bye & Solli, 2007). Warren et al. (2005) describe a similar situation with 'green on green'. Wind power controversies have some things in common with other conflicts about socio-economic benefits and conservation of landscapes and habitats. However, what is unique about wind power is that there are 'green' arguments on both sides in this debate. On one side, people emphasise the 'local' nature and landscape, while the other side of the discussion emphasises global climate changes as their main argument (Warren et al., 2005).

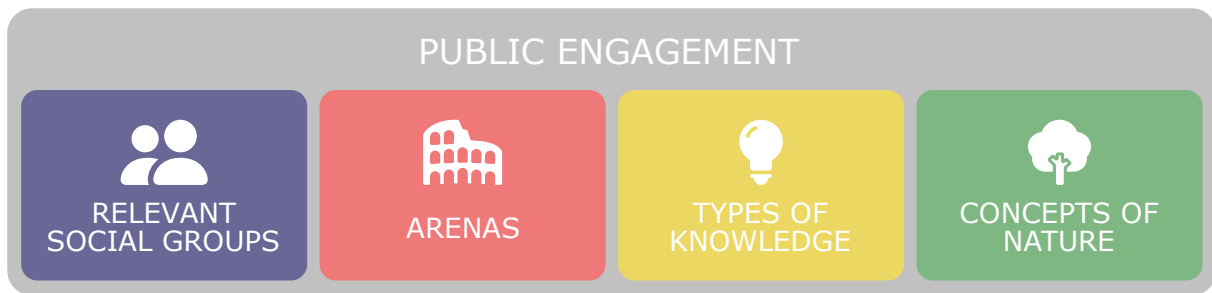
Solli (2010) has done a similar finding in his study of how the parties in a wind power controversy craft their arguments to mobilise people to engage in the debate. He researched two wind farm projects in Norway in his studies, Høy-Jæren and Smøla. Solli found that the sea eagles had been the centre of the wind turbine debate in both cases. The sea eagles were used to argue against the wind farm because the wind turbines could be dangerous. On Høy-Jæren, the developer wanted to make the topic of sea eagles less conflicted. They made detailed plans for the wind turbines' location to make the impact on the sea eagles smaller to accommodate for some of the resistance they anticipated (Solli, 2010).

It is important to include different concepts of nature as a dimension in this conceptual framework because concepts of nature can contribute to explaining how the actors in the controversy and decision-making perceive wind farms. The concepts of nature are meanings and values at a deeper level than facts and knowledge. Considerations connected to nature are important in energy debates and must therefore be included to understand the dynamics in the controversy and decision-making.

### 3.6 Research Questions Revisited

At the beginning of the thesis, I presented a central research question for the thesis:

- How did the controversy and the decision-making unfold, leading to the Frøya wind farm?



*Figure 2 The four dimensions.*

By combining the different theoretical approaches presented in this chapter, I have constructed a well-fitted conceptual framework for this thesis's empirical material (figure 2). The concept of public engagement and participation is the base of the theoretical framework. The different social roles in the controversy and decision-making process and the arenas where the actors meet to discuss are factors in understanding why wind power is controversial. The different types of knowledge involved in the controversy and decision-making processes and what is left out are necessary to understand the injustice some actors feel when their opinions are not considered relevant by the government. Combined with the concepts of nature, it makes enables us to understand why the actors in the controversy argue against each other and why the controversy is seemingly hard to settle. These dimensions pave the road for more nuanced research questions:

1. What are the relevant social groups, and what are the arenas they meet in?
2. What kinds of knowledge, and more specifically what conceptions of nature, are included and excluded in various arenas?
3. How do the decisions reflect the answers we found to questions (1) and (2)?



## 4 Methodological Considerations

Methodological considerations and the data material will be presented and discussed in this fourth chapter. First, I will explain the choice of method and how I recruited the informants. Thereafter present reflections on my role as a researcher and how I analysed the empirical material. Finally, I will explain the process of analysing the data material and my choices while doing so.

### 4.1 Semi-structured Interviews

The data material in this thesis consists of 10 semi-structured, qualitative interviews with inhabitants of Frøya, as well as representatives from non-governmental organisations (NGOs), people involved in the construction of the wind farm and in the decision-making process. The interviews were done in October and November 2021. Most of the interviews were conducted during fieldwork at Frøya from the 1<sup>st</sup> to the 3<sup>rd</sup> of November 2021, with researcher Marius Korsnes from the Norwegian Centre for Energy Transition Strategies (FME NTRANS). In addition, I have done some additional interviews both before and after this field trip to Frøya. The interviews lasted, on average, one hour, with the shortest one taking 35 minutes and the longest 90 minutes. One of the interviews was done digitally, and the others were physical interviews.

I have chosen to use semi-structured interviews because I wanted to figure out how the actors experienced the controversy and decision-making. Semi-structured interviews are in-depth interviews and are used due to an "interest in understanding the lived experience of other people and the meaning they make of that experience" (Seidman, 2006, p. 9). Interviewing provides a context for the way people behave (Seidman, 2006). Using quantitative, semi-structured interviews meant that I could ask more in-depth questions and follow-up questions that I would have been able to do using quantitative methods, like questionnaires. Some informants have not engaged in the public debate before and for example only using document analysis to analyse the written material in the Frøya decision-making and controversy might not represent their experience. I would not have been able to answer the research questions by using quantitative interviews or document analysis. Qualitative interviews made it possible for me to articulate the opinions of people who did not participate in the public debate and the licencing process. In turn, this made it possible for me to answer the research questions for this thesis.

The interviews were in-depth semi-structured interviews, meaning that some of the themes and questions are predetermined and can be adjusted as the interview progresses (Gray, 2004). Since the interviewees have different stands in the debate, and some represent various organisations, having semi-structured interviews made it possible to adjust the interviews to each informant. The semi-structured interviews require that the researcher improvise using open and closed questions (Gray, 2004). For this thesis, I have made three interview guides. One of them was directed to the inhabitants and NGOs I interviewed about their wind farm experiences (appendix 1). The other interview guide was meant for the people involved with the decision-making process (appendix 2). The third interview guide was directed at the developer (appendix 3). This interview guide has some common features with the first interview guide.

Since I did most of the interviews with Marius Korsnes, the interviews are also based on his guide. This might have led to other responses because we had different perspectives on the interviews. Korsnes and I took turns asking questions, but since the interviews were semi-structured, we had the opportunity to ask follow-up questions based on the

informants' answers. In the next section, I will explain how I went about selecting informants to provide an answer to the research questions.

## 4.2 Recruiting Informants

In this thesis, it has been important to investigate the different experiences connected to the wind farm on Frøya. I recruited interviewees through purposive sampling because it was important to recruit informants with experience with the wind farm to answer the research questions (Gray, 2004). In that sense, all the inhabitants or people who had a connection to the island were potential interviewees. In addition, I used the case documents from the municipality and the NVE, as well as the local newspaper to look for informants. I also contacted people and organisations I saw were active in the debate through these written sources.

At the beginning of selecting interviews, I read the book *Vindmøllekampen* (2021) by the Norwegian journalist Anders Totland. In this book, Totland describes the resistance against wind farms on Frøya (Totland, 2021). This book helped me find names of central people in the debate to contact. Unfortunately, a lot of people turned down the request for an interview. There might be multiple reasons for that, but it might have something to do with the tense debate that started in 2019 with the construction of the Frøya wind farm. I used the book because not all the people that could be relevant for me are mentioned in newspaper articles and in case documents from NVE or the municipal council.

It was hard to access the field and get informants. At the beginning of the field trip to Frøya in November Korsnes and I also tried walking in the area where the wind turbines are placed since it is a known hiking area for some of the local people on Frøya. On these hikes, we did not meet anyone at all. We also tried to contact someone that sat in a café. Even though we met people this time, it did not lead to any interviews.

In addition, I contacted the local digital newspaper Frøya.no before going to Frøya. By doing this, I got help to find more names of both opponents and proponents in the debate, and I was fortunate enough to get an article in the newspaper about Kornes' and my project. This led to multiple people contacting us to contribute to our research.

To ensure the anonymity of the informants and make it easier to read the analysis I pseudonymized the informants by giving them fictional names (table 1). The informants interviewed were not equally divided based on gender, but 64% male and 36% female. The pseudonyms are equally divided both to make the informants harder to recognize and to avoid unduly creating gender-based patterns in the empirical material. The data sample is too small to say something about the differences between the genders, and I therefore consider gender irrelevant for the rest of this thesis.

I have used the interview with Jennifer mainly to understand the decision-making process. The interview provided interesting background information, but she did not contribute to the controversy in any of the terms of my conceptual framework. This is due to the Jennifer's professional role in decision-making and not as a private citizen or NGO, like the other interviews. Therefore, the interview was not further analysed.



<b>Pseudonym</b>	<b>Self-identified role/involvement</b>
Jennifer	Involved in the decision-making process
Amanda	Involved in the construction of the wind farm
Mary	Proponent, inhabitant
John	Proponent, inhabitant
Susan	Neutral, inhabitant
Lisa	Opponent, inhabitant
Robert	Opponent, inhabitant
David	Opponent, inhabitant
Thomas	Opponent, former inhabitant
Anthony	Opponent, representative from an NGO
Linda	Opponent, representative from an NGO

*Table 1 Overview of Informants*

Interviewing eleven informants allowed me to collect several different perspectives. This also includes the different perspective the opponents, proponents or the ones that is neutral to the wind farm. These views are not generalizable as common views of the inhabitants and other stakeholders in the controversy and decision-making process, but it gives a useful insight to how some of them experienced it.

In the public debate in both the social media and the news media like newspaper articles, it is easier to find the opinions of the opponents of the Frøya wind farm in 2021 and 2022 than opinions of proponents. Therefore, it is easier to get in touch with possible informants that are opposed to the wind farm. However, in both referenda, there were people which voted in favour of the wind farm (Frøya kommune, 2022a; Rasmussen, 2019). This means that there are people on Frøya that wanted the wind farm despite that they were less vocal in the public debate. Due to the article in the local newspaper, I was able to reach out to proponents as well.

### 4.3 Reflections on My Role in the Interviews

The challenges we had with recruiting informants also had me thinking about my role in the recruitment and interviews. The tense situation of Frøya due to the wind farm having split families made some of the inhabitants suspicious about what our motives were. One of my main challenges with convincing people to interview them and conducting the interviews was the establishment of trust. Many of the interviewees expressed their concern with my motives for interviewing them. This meant that it was necessary to use some time to build trust and explain in detail who I am and why I was at Frøya to interview them.

As a researcher, you should be as neutral as possible in your study case. When I started working on this thesis, I knew very little about wind power. I am from the southern part of Norway, where the conditions for land-based wind power are not the best. Therefore, I did not know much about the Norwegian wind power controversy. I had never seen a wind turbine up close and figured I did not know enough about the controversy to make a stand in the debate. This might have made me more open to the people I interviewed. However, because of the tense situation surrounding the windfarm construction on Frøya, my opinions on wind farms were often put to discussion by the interviewees themselves. It seemed like a good gateway to speak with the people that self-identifies as both opponents, proponents and neutrals in the debate. My lack of experience with this topic made it easier to contact and interview people with different opinions. When I told my

interviewees about my own experience or lack of experience with wind power, the opponents often opened more up about their views.

However, being connected to the NTRANS research centre has also led to difficulties finding informants. A lot of the opponents that we came in touch with were hesitant about contributing to such a large centre because they feared that it would contribute to the proponent's part of the case. This is peculiar, as NTRANS is not a party in the Frøya case, and also not particularly favouring wind power in an uncritical way.

My role as a researcher has been important to reflect upon because of the tense situation due to the wind farm controversy on Frøya. In these situations, it is important to think through the ethical aspects of researching so that the informants will be protected. In section 4.5, I will look more into the ethical considerations of studying people.

#### 4.4 Thematic Analysis

After the data material was collected, I moved on to analysing it. Before I could start to analyse the empirical material from the interviews, I transcribed them. When the interviews were transcribed, I analysed it using thematic analysis. Thematic analysis means looking for themes or categories in the empirical material (Johannessen et al., 2018). A theme is defined as "a grouping of data with important common features"<sup>6</sup> (Johannessen et al., 2018, p. 280).

To code the material, I started to look for different themes and categories that could be interesting to pursue. To help sort the material I wrote a flat description of the empirical material. The flat empirical description helps highlight the most relevant aspects of the data material. In addition, this made it easier to see themes that the interviews had in common. After the first coding, I started looking for a theoretical framework that could help me in analysing the empirical material. When I had developed the theoretical framework, I went back to the empirical material and started to categorise it again based on the theoretical framework. This is an abductive method where I moved back and forth between the empirical material and the theory (Thagaard, 2013).

To help to keep track of the empirical material, I used the Qualitative Data Software NVIVO. This type of software can be used to code, classify and explore the empirical material more efficiently than you can do manually (O'Leary, 2014). In addition, NVIVO made it possible to search after keywords or themes in the whole material. I also used NVIVO to investigate the material that I used as background information for the thesis. This helped me understand what had happened in the controversy and some of the arguments that were used in the debate as well as with the development of the interview guides.

The interviews were conducted in Norwegian, and the interviews are fully transcribed. In this thesis they are presented stylized, meaning that I have removed the non-words that does not contribute to the message from the informant the way I interpreted it. The quotes used in the thesis is translated by me. I have also included the Norwegian version of the quotes so that people that read Norwegian can read it in the original language. This contributes to the transparency and reproducibility of the research, and it increased the reliability of the research (Thagaard, 2013).

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<sup>6</sup> My translation

## 4.5 Ethical Considerations

As a researcher, it is important to follow the ethical principles like anonymisation when doing research (Thagaard, 2013). Thagaard (2013) states: "the researcher's ethical responsibility includes protecting the integrity of the participants by seeking to avoid that the research causes negative consequences for the those who participate"<sup>7</sup>(Thagaard, 2013, p. 30). As a researcher it is therefore important to make sure that the informants are not harmed by having contributed to the research.

This project is reported to and approved by the Norwegian Centre for Research Data (NSD), mandatory for Norwegian research projects dealing with personal information. NSD makes sure that the approved projects follow the laws connected to dealing with personal data. Seidman (2006) describes informed consent as "the first step towards minimising the risks participants face when they agree to be interviewed" (Seidman, 2006, p. 61). A part of the NSD application is to make a consent form with information about the project for the informants to read and consent to (Norsk senter for forskningsdata, n.d.).

This project deals with personal information about the informants that can lead to them being identified and recognised in the thesis if it had not been for the principle of confidentiality. This means that the informants have a right to have their personal information treated confidentially (Thagaard, 2013). To follow the principal of confidentiality I have anonymized the informants and giving them pseudonyms and leaving out things that could identify them, like profession, gender, and age.

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<sup>7</sup> My translation



## 5 The Frøya Controversy

I have divided the analysis into two separate chapters. In chapter 0, I have gathered the arenas related to the decision-making and the arenas that are used in the attempt to influence the outcome of the decision-making. In this chapter, I present the controversy on Frøya and focus specifically on the news media arenas like newspapers and social media like the opponents' Facebook group. I will use the four dimensions of my theoretical framework that consists of relevant social groups, arenas, types of knowledge and concepts of nature to answer the research questions for this chapter:

1. What are the relevant social groups, and what are the arenas they meet in?
2. What kinds of knowledge, and more specifically what conceptions of nature, are included and excluded in various arenas?

### 5.1 Defining Relevant Social Groups and Arenas

In the empirical material, I have identified three relevant social groups that are involved in the wind power controversy on Frøya. The informants are divided into these relevant social groups based on how they perceive wind power development on Frøya and how they draw on different concepts of nature to support their positions. I have also identified multiple arenas where the controversy takes place.

The first relevant social group that I have identified is the 'oppose to save nature'-group. This group consist of opponents that did not want the wind farm on Frøya because of the encroachment on untouched nature. Those who are a part of that group are concerned with saving and preserving nature. This relevant social group perceive nature as vulnerable and in need of protection, presented in chapter 3.

'Support to benefit from nature' is the second relevant social group I have identified as part of the controversy. The people that are a part of this group want to benefit from nature in some way. Some of the informants in this group want the electricity to be cheaper and therefore see wind power as an opportunity to produce more power, which pushes the price down. Others in the 'support to benefit from nature' group want to make money by directly investing in the wind farm and hopefully profit from it. Yet others just want to have groomed trails to walk on. The relevant social group 'support to benefit from nature' perceive nature as a resource that can be exploited by humans. This worldview is connected to the perception of nature called 'nature as a resource' and is presented in chapter 3. The informants that are part of this group vary between being neutral to the wind farm, and just seeing that they get benefits from it, to have fought to have the wind farm on Frøya.

The third relevant social group is 'oppose and save energy'. The informants that belong to this group want to look at alternatives to land-based wind power. By reducing the use of power to a sustainable level, meaning that Norway would only need the hydropower it already has, it would not be necessary to construct wind farms. The informants in this group believe that the hydropower Norway has, together with reduced use of energy, should be enough to cover the entire country's energy need. Therefore, there is no need to build wind farms in Norway, according to this group. This group considered using less energy as a way to protect nature and the global environment.

I have identified two different arenas where the relevant social groups contribute to the controversy: news media like newspapers and TV stations, and social media like Facebook. The arenas presented in this chapter are important arenas for the controversy, and the arenas that are important for the decision-making will be presented in chapter 0.

## 5.2 Engaging Through Media

The main arena for public engagement in the wind power controversy on Frøya has been the media, both news media and social media. The local newspapers have been used to discuss the different sides of the wind power debate through letters to the editor in the local newspapers. Social media has been mainly used by the opponents to spread their opinion and information about the wind farm. In the controversy, the news media as an arena has been used by all the relevant groups.

A part of the public debate about wind farms on Frøya was through letters to the editor in the local newspaper. Mary, who I classify as a part of the group 'support to benefit from nature', self-identify as a proponent of the wind farm. She reported that the opponents often called up the local newspapers and asked them to come and make an article whenever they were doing something. Since Mary identified as a proponent of the wind farm, she felt alone in the debate because most of the people that spoke up were opponents. Despite that Mary felt alone in the debate, she thought it was important to debate the opponents and not just let them say what they wanted without any opposition.

The self-identified opponents reported that they did not feel that the news media would write about their side of the story at the beginning of the controversy. Robert, who I classify as a part of the group 'oppose and save energy', self-identifies as a wind farm opponent. According to Robert, the news media's focus on the benefits of renewable energy made no room for the opponents' scepticism. Robert even felt that the opponents were ignored when there was a big protest in Oslo, but no representatives from the press were there to cover it. This lack of press attention stands in some contrast to the fact that the press did in fact cover a dog show not far from the protests. This is some circumstantial evidence suggesting that the controversy was simply not considered interesting by the press.

Multiple opponents stated that their exclusion from the news media led them to create the Facebook group "Nei til vindkraftverk på Frøya" as an important arena for opposing views. According to several interviewed opponents, when the group got a lot of attention on Facebook, they got the news media's attention. The Facebook group as an arena was a response to the opponents feeling excluded by another arena, the news media. The response in the Facebook group made it easier for the opponents to be included in the news media later in the controversy. In other words, by moving the controversy from the news media to Facebook, instead of just focusing on being heard by the news media, the response on Facebook made it easier for the opponents to get access to the newspapers and TV stations.

The opponents have used the Facebook group to reach out to people that live on and outside Frøya. Several informants described the Facebook group as an important arena for gathering and spreading information about wind power. Robert describes the Facebook group as an important arena where people from different backgrounds and organisations could share information:

"We have often talked about that we would never have reached this far without Facebook. [...] You eventually got joined professionals. [...] And all these began to write as they arrived. All this contributed to provide more information to the people. So the Facebook page - I do not know what we would have been, if it had not been for it".

"Vi har ofte snakket om at vi aldri hadde nådd så langt uten Facebook. [...] Du fikk etter hvert med fagfolk. [...] Og alle disse begynte å skrive etter hvert som de skred fram. Alt dette var med på å gi mer opplysning til folket. Så Facebook-siden - jeg vet ikke hva vi hadde vært, hvis det ikke hadde vært for den".

The Facebook group allowed the opponents to reach out to people with information and knowledge from academia and organisations for recreation in nature and hunting. Several informants reported that they had met people who share the same beliefs and values regarding wind farms through the Facebook group. Lisa, who I classify as part of the group 'oppose and save energy', self-identified as an opponent of the wind farm on Frøya. Lisa strongly believed that the resistance in Norway has increased because of the news media and social media coverage, and the opponents, for example, on Frøya, have given the opposition "a face".

Amanda represents a pro-wind power company, and I classify her as a part of the group 'support to benefit from nature'. She believed that the Facebook group intensified the conflict on Frøya because many of the things written on Facebook would not have been said in a debate face to face. The lack of responsibility for what was posted in the Facebook group was the biggest concern for Amanda:

"It's up to each individual, no one takes responsibility. And that you must be allowed to say what you want in those groups. [...] It has been a generator of dissatisfaction, quite simply. If they did not have Facebook, then the world would have been completely different in a way".

"Det er opp til hver enkelt, ingen tar ansvar. Og at du må få si det du vil på de gruppene. [...] Det har vært en generator for misnøye, rett og slett. Hadde de ikke hatt Facebook, da har verden vært helt annerledes på et vis".

Amanda strongly believed that the lack of a formal leader in the Facebook group made it easier for members to be offensive without taking responsibility, which generated dissatisfaction. The comments on Facebook surprised Amanda. She thought it was terrible to see how far some group members went, like comments about Nazism directed toward the German investor Stadtwerke München.

Social media also allowed the wind farm opponents to get in touch with opponents from other countries. Thomas, who self-identifies as a wind farm opponent, I have classified as part of the 'oppose to save nature'-group. He understood early in the process that he could not fight the wind farm by himself. Like other opponents, he therefore started seeking people that share the same view on wind power. Thomas also described the Facebook group as a tool to "enlighten" people. For Thomas, who was not comfortable speaking in public, the Facebook group became an arena where he also could contribute to the debate.

To sum up, both the opponents and proponents of the wind farm on Frøya recognise the impact of social media – especially Facebook – on the debate. The opponents created the Facebook group when they could not gain access to the news media arena. Due to the

massive response in the Facebook group the informants reported that the news media started to show them attention and wanting them to participate in that arena as well. The Facebook group has also been criticised for allowing people to write offensively about their opponents, and that the problem with that type of arena is that people can say almost whatever they please according to some informants. In the next section I will discuss the knowledge's role in the controversy on Frøya.

### 5.3 Looking for 'New' Knowledge

Both opponents and proponents have used different types of knowledge to support their views through the controversy. As discussed in the previous section, the different arenas include and exclude different social groups. The arenas have varying conditions and rules for what knowledge is accepted and rejected. This has led some relevant social groups to seek new information that supports their view in order to be accepted in other arenas.

In the Facebook group, it has been a challenge for the opponents to distinguish between facts and 'fake news' due to the number of members and posts, according to several informants. Lisa reported that they had to "get rid of" some people who spread conspiracy theories in the Facebook group. However, the diversity of the members in the Facebook group has been helpful in figuring out what knowledge was valid and what was false. Several of the interviewees who are part of this group said that since there are many different people in this group, there are many people to tell you if you have published something false. Lisa reported that because there are a lot of scientist in the Facebook group, it is more difficult to say something incorrect and get away with it:

"[...] There will be such self-regulation in the group itself. So, what is written now, if there is someone who is out just to feather one's own nest whether it is climate scepticism [...]. Either it will just be taken out, or it will just disappear in the crowd. Because it is not something we stand for and most people know it".

" [...] det blir en sånn selvjustis i selve gruppen. Så det som skrives nå, hvis det er noen som er ute bare for å mele sin egen kake, om det så er klimaskepsis eller noe [...]. Enten så blir det bare tatt ut, eller så bare forsvinner det i mengden. Fordi det er ikke noe vi står for og det vet de fleste".

Since the group includes scientists and experts on different topics, like climate, nature and hunting, Lisa reported that the group has a way of controlling itself. For example, if someone questions whether there are climate changes, it gets deleted or disappears in the group's mass of posts. Thomas reported that he, by mistake, had shared some posts in the Facebook group that turned out to be fake. He felt that the only right thing to do was to delete it. According to both Thomas, Lisa and Robert, the members of the Facebook groups are so diverse in their fields of expertise that there is always someone to correct the false posts. The group relies on the members' knowledge to distinguish between right and wrong.

The opponents have found knowledge on infrasound, low-frequency sounds that some of the informants believed to be harmful to both humans and other living things. This view has not been widely supported by science, but the opponents have argued in debates that Russian research supports their view. The informants were divided in their perception of the dangers of infrasound, and some informants thought it should be investigated as a part of the licencing process. Others thought that infrasound could be harmful but that we do not know enough about it to say it for certain.



On Frøya, a doctor has become a spokesperson for the dangers of infrasound. Susan self-identifies as neutral in the wind power debate, and I have classified her as part of the 'support to benefit from nature' group. Susan reported that she thought that because a doctor was claiming infrasound as dangerous, more people believed in it:

"One cannot say anything for or against because it is not possible to really prove. Then you must do research for many years then, to find out if it actually has any effect. [...] In the experiments they had done in the USA and such, they thought that it was often those who were already negative to wind power who were most affected. [...] Then I think that then it's probably mental, right? Then it's in a way that you might notice things because you think about it".

"Man kan jo ikke si noe verken for eller imot fordi det går jo ikke an å bevise egentlig. Da må en jo utføre forskning over mange år da, for å finne ut om det faktisk har noen effekt. [...] I de eksperimentene de hadde gjort i USA og sånn, så mente de at det var gjerne de som allerede var negativ til vindkraft som ble mest påvirket. [...] Da tenker jeg at da er det sikkert mentalt, ikke sant? Da er det jo på en måte det at du kanskje legger merke til ting fordi du tenker over det".

Susan expressed that she thought that infrasound might be harmful to humans, but it requires research over a long period to know for sure. According to Susan, the doctor on Frøya acting as the spokesperson for the dangers of infrasound reported that people were affected differently.

To find knowledge about infrasound, which there has not been much research on, the opponents searched for knowledge outside of Norway. Robert, the self-identified opponent, said that it has been hard to find research on the impact of infrasound on humans, but that the doctor on Frøya eventually found some research on the topic:

"We bring forth new knowledge. And the new knowledge here – he [the doctor] has really been looking with lights and lanterns for new knowledge. Oddly enough, it is in fact in Russian research that they have found most in that area there, because they have needed it in connection with military exercises and things like that. Right? So they have come a long way in that area there. And just having people who sit and acquire knowledge in such a way, it's absolutely fantastic".

"Vi får frem ny kunnskap. Og den nye kunnskapen her – han [legen] har jo virkelig lett med lys og lykter etter ny kunnskap. Merkelig nok så er det faktisk i russisk forskning at de har funnet mest på det området der, fordi at de har hatt bruk for det i forbindelse med militære øvelser og sånne ting. Ikke sant? Så de har kommet langt på det området der. Og bare det å ha folk som sitter og skaffer seg kunnskaper på en sånn måte, det er jo helt fantastisk".

According to Robert, the only place where the doctor has found research on this topic is Russian research on military exercises. Both Robert, Lisa and Thomas, that identify themselves as wind farm opponents, say that it is necessary to actively search for new information that can help them in their battle to stop wind power in Norway.

Several proponents perceived land-based wind power as the easiest solution to make 'green' energy today as the technology to make renewable energy in other ways like solar power, wave power, and offshore wind power are not efficient enough. Mary

reported that she relied on the scientists in the United Nations and believed that the whole world must contribute to the transition to more renewable energy. When she grew up mid-century, the leading Norwegian goal was to rebuild society after World War II. According to Mary, everyone contributed to this project. If that meant sacrificing pristine nature, then that was the cost. However, today Mary feels that people are selfish and do what is suitable only for themselves. Here Mary is attributing NIMBYism to the wind power opponents, by describing them as selfish because they do not want the wind farm on Frøya. According to Mary, this conflict between building society and individualism might be connected to a more polarised society.

Mary uses newspapers to find new knowledge. She found that on an island in Denmark, the inhabitants and the municipality could invest in the wind farm surrounding the island. She thought that this model could have been helpful for the wind farm on Frøya as well. Instead of relying on foreign investors, the inhabitants could make money on the wind farm themselves:

“Then they have placed them, not on land, but they have placed them in shallow areas around the island. So that they are in the sea then, but in shallow areas. And then of course they supply that island with electricity. But in addition, all the inhabitants were allowed to buy into it [the wind farm] and make some money on it as well. [...] it can be a good model. Because part of the reason why there was great local opposition here was that, at least one of the arguments was that most of the party was owned from abroad. And it was not well received by all”.

“Så har de plassert dem, ikke på land, men de har plassert dem på grunne områder rundt øya. Så at de står i sjøen da, men på grunne områder. Og så forsyner de den øya med strøm selvfølgelig. Men i tillegg så fikk alle innbyggerne lov til å kjøpe seg inn i det [vindkraftverket] og tjene litt penger på det i tillegg. [...] det kan være en god modell. Fordi at en del av årsaken til at det var stor lokal motstand her var jo det at, hvert fall ett av argumentene var at det ble eid meste parten fra utlandet. Og det falt ikke i god jord til alle”.

According to Mary, the model from Denmark where the inhabitants and the municipality invest and make money from the local wind farm could have solved the situation with foreign investors, like Stadtwerke München. Mary thought that including the inhabitants on the business side of the wind farm could make them feel that they were profiting from having the wind farm in their local area.

To summarise, these examples shows that different types of knowledge are used in the controversy. Most of the knowledge used in the controversy is based on scientific knowledge. Experience-based knowledge is less used in the controversy and are not that highly valued by the actors in the debate as opposed to scientific knowledge.

#### 5.4 Conservation of Nature Versus Renewable Energy

As discussed in chapter 3, using nature as a resource or perceiving nature as something vulnerable that must be protected are two ways to perceive nature. In the relevant social groups ‘oppose to save nature’ and ‘oppose and save energy’ they perceive nature as vulnerable. The group ‘support to benefit from nature’ perceived nature as a resource that could be used by humans.

David self-identifies as a wind power opponent, and I classify him as a part of the relevant social group 'oppose to save nature'. According to David, renewable energy, including wind power, is portrayed in the news media as something positive. Several interviewed opponents have also criticised the news media for not telling their side of the story. According to David, the news media has also been accused of giving a positive impression of renewable energy. David questions how 'renewable' wind power actually is:

"Is it actually renewable? I learned when I was young that energy is not renewable at all because by creating energy you always lose energy. So you can never, ever have renewable energy".

"Er det faktisk fornybart? Jeg har lært da jeg var liten at energi ikke er fornybart i det hele tatt fordi vi ved å skape energi mister du alltid energi. Så du kan aldri, aldri ha fornybar energi".

David sees wind power as not renewable because energy is always lost in the processes of transforming energy from one form to another. This is an example of 'green on green' where David questions if the wind turbines are environmentally friendly if it is not renewable. At the same time the proponents like Mary argue that it is necessary to use renewable sources instead of fossil fuels. There are 'green' arguments on both sides of the controversy arguing for the best solution for climate and nature.

The interviewees had different opinions on what they were willing to offer and what the cost of renewable energy should be. Whether the wind farm on Frøya was built or not, the interviewees said they had to sacrifice something regardless, whether it was nature, tax income, or their electricity use. For the 'support to benefit from nature' -group, nature could be sacrificed to be able to continue living the life they live now and the life they imagine to be living in the future. The 'oppose to save nature'-group did not want to sacrifice nature to be able to live the same way that they do today, with the same consumption of energy. The group 'oppose and save energy' reported that they were willing to use less energy to save nature.

Conservation of nature in the construction area has been a heavily debated subject in the news media and social media and was also discussed in the interviews. Several opponents said that the main problem with wind farms is the destruction of the habitat of birds and untouched nature. The construction of wind farms has changed the landscape and the swamps formed over thousands of years. In addition, birds that crash into the turbines are also a known problem. Linda is a self-identified opponent and I classify her as part of the 'oppose to save nature'-group. However, according to Linda, we do not know the extent of bird crashes on Frøya. On Smøla, the deaths of sea eagles have been registered, and Linda claimed that one could only imagine the total number of birds killed or injured by wind turbines on Frøya. Linda therefore perceived nature, animals and birds that live in it as vulnerable and in need of protection.

Areas on the earth are scarce, and the areas on Frøya are no exception. Preserving the vulnerable nature that needs to be protected from being ruined is a significant concern for the 'oppose to save nature'-group. Several of the interviewees reported that there is not a lot of untouched nature left and that one should protect what is left of it. Thomas reported that the untouched nature on Frøya has suffered due to human activity. According to him, the area where the turbines are placed is an important area for recreation and animals. Thomas says there is an ambivalence between having renewable energy and needing untouched nature that can store the CO<sup>2</sup> in the atmosphere. He describes the swamp where the wind farm is located on Frøya as a "lung" and that we do

not know yet how much we will need it in the future. Thomas also thinks that it is necessary to take care of nature and that the present would have looked different if we had done it in the first place. He is afraid of what it would mean for the future if we do not start considering nature's needs.

One of the mitigation measures in the construction area is facilitating outdoor life. According to Susan, the area where the wind farm is located was a hiking area before the wind farm was built. She was unaware of this before the protest and said that she uses the site more now because of the groomed trails. Antony is a self-identified opponent, and I identify him as a part of the relevant social group 'oppose to save nature'. Anthony argues that these types of mitigation measures are not a good enough argument to construct wind farms:

"And that is not a good way to facilitate outdoor life. But it is of course, not negative that one in a way try to make the best of it. That is in hindsight, but it is not an argument to, it does not justify destroying a natural area that you put a shelter on top afterwards. [...] This is too easy. It is too disrespectful compared to how big an intervention it actually is then. So for us, it is first and foremost, and really completely, about destroying an intact natural area and turning it into an industrial area".

"Og det er ikke en god måte å legge til rette for friluftsliv på. Men det er jo selvfølgelig, ikke negativt at man på en måte prøver å gjøre det beste ut av det. Sånn i ettertid, men det er ikke et argument for å, det forsvarer ikke å ødelegge et naturområde det at du setter en gapahuk på toppen etterpå. [...] Det blir for lettvint. Det blir for respektløst ovenfor hvor stort inngrep det faktisk er da. Så for oss så handler det først og fremst, og egentlig helt og fullt, om at ødelegger et intakt naturområde og gjør det om til et industriområde".

When it was decided that the wind farm would be built, Anthony said that it is not a bad thing to facilitate experiencing the outdoor life with a stroller or a wheelchair. However, he claims that Norway has a lot of groomed trails that makes nature accessible for these groups. According to him, the wind farm area is already industrialised and not part of untouched nature anymore. Anthony reported that he felt heard in the debate when he used nature preservation as an argument against wind farms. Mary reported rejection when she used the global climate crisis as an argument for having wind power.

John self-identifies as a proponent, and I classify him as part of the 'support to benefit from nature'-group. He used a quote from the politician Einar Førde concerning allowing colour TV in the 1970s to describe the way that the opponents argue against the wind farm in Norway:

"We acknowledge that the sin has come to the world, but do not want it in colours'. And it is much the same with wind power. We can accept wind power, the ones that are against it, but not in our area, to put it that way".

"Vi erkjenner at synda har kommet til verda, men vil ikkje ha den i fargar'. Og det er mye med det samme med vindkraft. Vi kan akseptere vindkraft, altså de som er imot det, men bare ikke på vårt område for å si det på den måten".

John uses a description that can resemble as NIMBY to describe the opponents in the quote. According to him, the wind farm opponents do not necessarily resist wind power,

but they are against having a wind farm in their local area. Aitken (2009) has criticised this way of explaining the opposition to wind farms because this would mean that the opponents are not opposed to wind farms in general, only in their local area. Anthony expressed that he thought Denmark would be better suited for wind farms because the wind turbines are located in areas that already have been impacted by humans, like fields and residential areas. However, in Norway the wind farms are in pristine nature areas, and Anthony thought that this was wrong since Norway has used the untouched nature to develop hydropower.

Both the opponents and the proponents of the wind farm on Frøya have different perceptions of nature. Though the perceptions of nature are different, they all use different types of knowledge and arguments to argue for their view on wind. The relevant social groups draw upon the different perceptions of nature to make their point in the wind power debate.

### 5.5 A Polarized Controversy

Exclusion from different arenas in the wind farm controversy has led to the controversy becoming more controversial. The arenas have different rules for what types of knowledge, relevant social groups, and worldviews that are included. The opponents, including both of the groups 'oppose to save nature' and 'oppose and save energy', have felt excluded from the news media. This exclusion led them to move the controversy to Facebook, and since social media is less regulated in terms of what is allowed to say or not, the controversy got more polarized. By moving the controversy to Facebook and getting a massive response from people there, the opponents managed to gain access to the news media. Both opponents and proponents report that the Facebook group has had a significant role for the opponents to get their voices heard in the controversy.

The opponents from the relevant social groups 'oppose to save nature' and 'oppose and save energy' has tried to find new knowledge about the wind farm's impact on humans and their surroundings. They have found Russian research about infrasound and argue that this is something that should be considered in the licensing process. So far, it is not a part of the wind farm licencing process.



## 6 The Decision-Making Process

This chapter will focus on the decision-making process concerning the wind farm on Frøya. As mentioned in the previous chapter, I define the decision-making process as more than the licencing process and the arenas that are a direct consequence of applying for a wind farm licence. The protest is both a controversy arena and a decision-making arena, but I have placed it in this chapter to show how it has been used in the attempt to influence the decision-making process. The referenda have been used by the municipal council as an arena where the publics could give advice about their opinions on the wind farm. In short, I define the decision-making process more broadly than only the licencing process in this thesis. The reason is that multiple stakeholders in the licencing process tried to change the outcome through arenas that do not formally belong to the process, but upon closer look do in fact attempt and succeed to affect it. Like in the previous chapter, I will use the four dimensions of my theoretical framework; relevant social groups, arenas, types of knowledge and concepts of nature to analyse the decision-making process on Frøya and answer the following research question in this chapter:

3. How do the decisions reflect the answers we found to questions (1) and (2)?

Based on the findings from the last chapter, and some new findings connected to the relevant social groups, arenas, types of knowledge and concepts of nature in decision-making, I will answer this sub-research question in this chapter.

### 6.1 Overview of Relevant Social Groups and Arenas in Decision-Making

I define the same relevant social groups in the decision-making as I did in the controversy: 'oppose to save nature', 'oppose and save energy' and 'support to benefit from nature'. More information on what the different relevant social groups can be found in chapter 5.1.

In this chapter, I will also include arenas that the relevant social groups used in the attempt to influence the outcome of the licencing process that generally are not a part of the process. As discussed in chapter 1, licencing authority, the NVE, is responsible for ensuring that all the stakeholders are included in the licencing process for wind farms. Public hearings and meetings are the organised arenas for public engagement and are a part of the licencing process for wind farms. NVE uses these arenas to ensure that all the stakeholders in the wind farm licencing are heard in the process.

Another arena connected to the decision-making process on Frøya is the two referenda where the inhabitants of Frøya could vote if they wanted the wind farm or not. The referenda were conducted in 2005 and 2019. As discussed in chapter 1, the outcome of the first referendum was a narrow majority wanting the wind farm. However, in the second referendum, the majority voted against the wind farm on Frøya.

The publics used arenas such as protests in an attempt to influence the wind farm decision-making on Frøya. In some cases, even vandalism and threats were used as an instrument to influence the decision-making and the development.

To summarise, the three relevant social groups are 'oppose to save nature', 'support to benefit from nature', and 'oppose and save energy'. In addition, there are several different arenas that are a part of the decision-making. These arenas are public hearings,

referenda, and protests. In the following sections, I will discuss the relevant social groups, and their actions to attempt to have an impact on the decision-making.

## 6.2 Engaging with Decision-Making

In chapter 1, I presented how the publics engaged in the controversy through the news media and social media. All the relevant social groups were involved in the decision-making process concerning the wind farm on Frøya. The groups 'oppose and save energy' and 'oppose to save nature' have been more visible in arenas like public hearings, referenda, and protests than the group 'support to benefit from nature'. Several informants have criticised the licencing process and the municipal council's role in the decision-making. The knowledge included in the decision-making process has also been heavily discussed.

When the first plans of a wind farm on Frøya were presented in 2002, several informants reported that most of the inhabitants and the municipal council were optimistic about the plans. By the time the wind farm was finished in 2019, the technology had changed (see section 6.3), and so had the financial situation in the municipality. Multiple informants reported that the economic situation for Frøya changed due to the salmon farming industry. The property tax and the jobs that came with this industry had led to Frøya being wealthier than when the wind farm was first planned, and the economic benefits from the wind farm were now less important for the municipality.

Susan, introduced earlier, self-identifies as neutral and belongs to the relevant social group 'support to benefit from nature'. She described the wind farm controversy before 2019 as "hibernating". Susan described a situation where the inhabitants formed groups based on their point of view. She thought many people joined the opponents initially because: "... if you could choose freely between having people putting up really tall wind turbines or not, then most people would say: 'No, preferably not, if possible'"<sup>8</sup>.

The wind farm had been planned since 2002 without being constructed, and informants explained that the resistance from the inhabitants was not very visible before 2019 because many of the inhabitants did not believe that the wind farm was going to become a reality. However, when TrønderEnergi announced that they had found a new investor, Stadtwerke München, the situation escalated, according to Susan. Several informants reported that TrønderEnergi's lookout for investors was unknown to the publics, and it came as a surprise to them that the wind farm would be built.

As presented in chapter 1, the resistance from some of the inhabitants made the municipality change their view on the wind farm. Together with the opponents, they tried to stop the construction by holding a referendum and declaring the developer's dispensation to build as expired. The opponents figured they had limited time to stop the developers from starting the construction before 7 April 2019, the final day to start the building before the licence expired. Susan perceived TrønderEnergi as desperate when they placed an excavator in the construction area as a sign that they had started the construction of the wind farm. The opponents were provoked by the way TrønderEnergi acted, and Susan reported that placing the excavator as a sign of the construction start might have aggravated the conflict.

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<sup>8</sup> "...hvis du får velge helt fritt mellom skal folk sette opp kjempehøye vindmøller eller ikke, så sier de fleste 'nei, helst ikke hvis det går an'"



Mary, the self-identified proponent and a part of the 'support to benefit from nature'-group, reported several occasions where the municipal council discussed whether the wind farm licence was valid. During these meetings, the chair of the meeting decided that the opponents in the audience could give applause as a response to the speeches they liked. She describes this as a problematic situation. Some of the municipal council members did not stand up and speak their minds because they feared not getting applause from the audience.

The developer's investments and the licence granted by the NVE made it difficult for the opponents and municipal council to stop the construction when TrønderEnergi decided to start building the wind farm on Frøya. The only way to stop it was to find a way to make the licence invalid or expired, according to Lisa and Robert, that belong to the relevant social group 'oppose to save nature' and self-identifies as opponents. Susan, on the other hand, did not think that anything could stop the developers:

"They [the developers] had gotten a 'yes', and they had made the investments. And then there is no way back, and then there is no point in protesting because it could never have been stopped. [...] So, the case was settled from the start".

"De [utbyggerne] hadde jo fått 'ja', og de hadde gjort investeringene. Og da er det ingen vei tilbake, og da er det egentlig ikke noen vits å protestere fordi den kunne aldri blitt stoppet. [...] Så saken var jo egentlig ferdig fra start"

The developers had what they needed to start the construction, and therefore the second referendum held by the municipal council had no significance. Mary characterised this referendum as "a horrible way to run a local society"<sup>9</sup>. According to her, the referendum only led to more division among the inhabitants of Frøya. Since the licence for the wind farm had already been granted, the referendum had no impact on the decision-making.

To try and stop the construction, the opponents got help from the NGO Miljøvernforbundet on how to demonstrate without giving the developer arguments that could be used against them. They protested against the wind farm by walking around in the construction area and not by directly confronting the developer, according to Lisa:

"Fortunately, we quickly received help from 'Green Warriors of Norway', which realised that this could be a catastrophe for us if we stood in the way of everything. If we acted in an unwise way. Because then it would only give them arguments. So, we probably had a passive resistance case where we did not meet them and did not confront them, but we stayed in the field - at a long distance from both the police and everything like that in that period".

"Heldigvis fikk vi fort hjelp fra Miljøvernforbundet som skjønnte at dette kunne bli en katastrofe for oss hvis vi stilte oss i veien for alt sammen. Hvis vi aksjonerte på en uklok måte. For da ville jo det bare gi de argumenter. Så vi hadde vel en passiv motstandssak der vi ikke møtte de og ikke konfronterte de, men vi var i marka - på lang avstand fra både politi og alt sånt i den perioden".

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<sup>9</sup> "En forferdelig måte å drive et lokalsamfunn på".

By avoiding a confrontation, the opponents tried to prevent giving the developer a reason to remove them from the area or not listen to them. They started to film what was going on during the last week, documenting everything that happened.

The opponents have not only received help from organisations outside Frøya, but people from other places in Norway came to help with the protests. Getting help from the outside of Frøya has also been questioned and criticised. Amanda, who is part of the relevant social group 'support to benefit from nature', reported that many people who have come to Frøya only to demonstrate, without having ever been there before.

To sum up, all the relevant social groups 'oppose to save nature' and 'support to benefit from nature' have engaged in the decision-making process. Informants in the 'support to benefit from nature'-group reported that it was hard to be involved in the decision-making process when they were proponents of the wind farm because of the massive resistance. The second referendum and protests were attempted to be used by the opponents and the municipal council to stop the construction of the Frøya wind farm. Despite the resistance from the opponents, the developers had a wind farm licence granted by the NVE and built the wind farm regardless of the protests and the referenda.

### 6.3 Time-Consuming Licencing Process and New Technology

The time-consuming licencing process and decision-making have led to dissatisfaction among all the informants. It has not only been frustrating to wait for a wind farm that might come, but the long licencing process has also led to another challenge, taller wind turbines. Due to the decision-making lasting more than 15 years, the wind turbines got more efficient and taller. The result was that the wind farm was visible from most of the main island in Frøya municipality.

Despite the licencing process taking over 15 years, Susan criticised the inhabitants of Frøya for getting involved too late in the process:

"It might not be relevant for all types of conflicts, but here Frøya has a history with people reacting a bit too late. First, when it in a way hits you in the face, it is like: 'Wow, no, but we do not want that!'. And then there is something with the licences too when it has taken 15 years. It had happened a lot with the perception of how good wind power was [...]. Of course, it is green energy, but it affects large nature areas. And the knowledge too, and the development in the field has a huge change during those years".

"Det er jo ikke sikkert at det er relevant for alle typer konflikter, men akkurat her så har jo Frøya en historie med at folk reagerer litt sent. Først når det på en måte treffer deg i fleisen så er det; 'oi, nei, men vi vil jo ikke ha det!' Og så er det noe med de konsesjonene også når det har gått 15 år. Det hadde jo skjedd ganske mye med oppfattelsen av hvor bra vindkraft var [...] Selvfølgelig, det er jo grønn energi, men det går jo utover store naturområder. Og den kunnskapen også, og den utviklingen på det feltet var det enorm stor endring på i løpet av de årene".

According to Susan, the perception of wind power had also changed during the lengthy decision-making process. These changes had made the inhabitants more resistant to the wind farm plans. According to John, the perception among the inhabitants of how good wind power is as an energy source and the impact on nature has changed since the first

plans of the wind farm. Several informants from the groups 'oppose to save nature' and 'oppose and save energy' reported that they did not feel heard in the process. Lisa reported that when they spoke to opponents from other countries, they found that they had one thing in common: "one did not ask people". She reported that when she spoke to opponents in other parts of the world, they did not feel heard in the wind farm decision-making.

Due to the time-consuming licencing process, technological development has changed the wind turbines from the original plan. According to several informants, this made the conflict more intense because they did not feel that this was what they initially agreed to. Susan reported that people reacted because the project changed from the beginning to the finished plan. According to her, the change in the original plan was what the inhabitants reacted to. Despite that, the number of turbines had gone from 64 to 14. Susan did not feel that this was something to be upset about, but she understood that other people reacted to the change of plans. The increased height also made the turbines visible from large parts of Frøya since the island is relatively flat. Susan describes the conflict between the size of the turbines and the flat island like this:

"It is so flat here, right? The highest point is like a joke. It is 76 meters above sea level. It's nothing in a way, there are no peaks here. So, then everything that is high [...] towers and protrudes, sort of. So that was probably a bit why people reacted so strongly to it».

"Det er så flatt her, ikke sant? Det høyeste punktet er jo liksom en vits. Det er 76 meter over havet. Det er jo ingenting på en måte, det er jo ingen topper her. Så da blir jo alt som er høyt [...] det ruver og rager over, liksom. Så det var nok litt derfor at folk reagerte så sterkt på det".

The technological development for wind turbines has made the number of turbines needed decrease but has also led to a changing landscape on the flat island of Frøya. The highest point on the island is 76 meters above sea level, and anything higher than that is evident to the inhabitants. Despite that the actual land area where the turbines are placed is smaller than the original size due to the decreased number of turbines, Thomas argues that the sweeping area of the turbines is equally important as the land area. As the turbines get higher, the rotor blades get more extensive, making the turbines use a more significant air area. Thomas argued that this would significantly affect the area's birdlife with collisions with the rotor blades.

John and Mary from the group 'support to benefit from nature'-group felt that they did not need to participate as much in the decision-making process and controversy, because they thought that the wind farm would be build either way due to the governmental goal for the wind power.

To summarize, the licencing process had led to a change from the initial plans to the finished wind farm because it took 15 years and the wind turbine technology developed. The wind turbines got taller and therefore more efficient. Due to the height of the wind farm, the wind turbines are visible from large parts of Frøya. The visibility from major parts of the island has also led to more conflict according to the informants.

## 6.4 The Role of Knowledge in Decision-Making

All the interviewees agree that the licencing process for wind farms in Norway should be based on facts and knowledge. However, they disagree about what knowledge is relevant in such a process and whether we have sufficient knowledge to grant or deny licences.

Though the NVE decided to grant the licence for the wind farm on Frøya, the knowledge from governmental agencies is not unambiguous. Several informants refer to different reports from the Norwegian Environment Agency. They say that because of the wildlife in the area, including birds on the Norwegian red list, the area is not suited for wind turbines. In addition, the Directorate for Cultural Heritage also warned about having a wind farm in the area because of findings from the Stone Age.

The increased height of the turbines has also led to another problem, flashing red lights on the top of the wind turbines. These lights are installed to alert planes about tall wind turbines. According to David, the health of people living close to the wind farm was affected both mentally and physically. David also reported that people have had to move from Frøya because they did not feel taken care of in this situation. He also wondered if the lights on the wind turbines could affect the animals and birds that live in the area. David also thought that the lights could affect the birds' sense of direction, but he said that this was only speculations from his side. Both David and Susan argued that it was unsafe to drive along the road alongside the wind farm area when it was dark. The flashing lights from the wind farm are the only lights available in the area, making it difficult to see the road when it is dark. Since there are no streetlights along the road, one gets blinded by the lights from the wind turbines. David and Susan were therefore concerned with the safety of driving alongside the wind farm.

According to Susan, the lights came as a surprise. She expected a similar solution to the ones on Hitra, where the lights are white and constantly lit. The pulsating red lights on Frøya are due to the height of the turbines, despite that the wind turbines at Frøya are placed low in the terrain and not on hills like some of the turbines on Hitra. To find out more about why Frøya got different lights than Hitra, David called the responsible party, the Air Force, to get more information. The Air Force reported that they could not fly below 1000 feet, equivalent to about 300 meters. The wind turbines are lower than that, and this made David confused.

Linda describes a licencing process based on low budget "desk reports". These are environmental assessment reports made by consulting firms based on already available knowledge. Some of the reports are based on observation of birds registered in the Norwegian Biodiversity Information Centre and not studies done by ornithologists. The high cost of studying sea bird colonies might be the reason why the environmental assessment reports rely on observations and not new research. Despite the price, Linda claims it is important to research the big sea bird colonies along the Norwegian coast to find out where the vulnerable areas are.

As mentioned in chapter 1, the report "Nasjonal ramme for vindkraft" has been heavily criticised both in the news media and the interviews, and the government no longer use this as a plan for wind power development. Linda claimed it was difficult to build wind farms because the plan was not thorough enough. She compared "Nasjonal ramme for vindkraft" with the plan for hydropower "Samla plan for vassdrag". This plan included the inhabitants' meanings about wind farms in their local area and suggested places where the hydropower was profitable and wanted in the local community.

David, that self-identifies as an opponent, and that I classify as part of 'oppose to save nature', questioned the model for licencing where "ordinary people" would have to understand and argue plans made by people who are paid to make them:

"So all the politics it ends up on our plate or our table. Right? We sit here as ordinary people, then we meet plans from people who have acquaintances in the EU and in Germany. [...] Then you have to start to actually figure out how things are connected. And that's not really my job".

"Så all den politikken den havner på vår tallerken eller vårt bord. Sant? Vi sitter her som vanlige mennesker, så vi møter planer fra folk som har bekjentskap i EU og i Tyskland. [...] Da må du begynne å faktisk finne ut av hvordan ting henger sammen. Og det er egentlig ikke min oppgave".

David claims that it is not a task for ordinary people to stand up against plans made by people with connections in the EU and Germany. To him, it felt unfair that this type of politics would be something that the inhabitants of Frøya would have to deal with and fight against. David feels that it is unfair for him that he is not an expert in politics, wind power or decision-making, that he must fight against people that are hired to apply for and build a wind farm. He feels that he must become an expert in wind farms to try to make sure that the nature is not destroyed. He does not feel that this is his job.

To summarise, not all knowledge is considered valid in the decision-making. The experience-based knowledge that all humans have are not included in the licencing process. Neither are the values and feelings from the stakeholders in the decision-making. In the licencing process the main type of knowledge that is considered valid is scientific knowledge that the NVE have decided to agree to.

## 6.5 Perceptions of Nature in the Decision-Making

The decision-making, especially the licensing process, has been criticised since the goal of the Norwegian government is to produce more wind energy each year. The licencing process has been criticised because the government has a goal for the amount of energy that should come from wind power, and therefore some of the informants see a connection between that goal and the outcome of the wind farm licenses. Opinions related to perceptions of nature in the decision-making process is presented in this section.

Lisa is a self-identified opponent and I originally classified her as part of 'oppose and save energy', but she can also be placed in the group 'oppose to save nature'. According to Lisa, Norway is the only country willing to place wind farms in untouched nature. Opponents from other countries have reported that the wind turbines in their countries are built in areas that have been industrialised before, according to her. Lisa is also concerned that the former prime minister in Norway, Erna Solberg, has put what she calls a "price tag" on Norway's untouched nature for Norway to become "Europe's battery".

Several interviewees pointed at hydropower and developing new technology as a substitution for wind power on land. Others claimed that reducing the amount of energy we use is the way to go. Instead of producing energy for Europe, the informant thinks that Norway has enough hydropower. The right thing to do would be to modernise Norway's hydropower to make it more efficient. In that way the wind power would be

unnecessary. Linda suggested offshore wind power and said that even though it is harmful to both birds and fish, it does not require that new roads are built.

Anthony characterised land-based wind farms in Norway as an "incomplete technology"<sup>10</sup>. He claimed that Norway should not have to sacrifice its nature to sell energy to Europe. However, Anthony said that other places were better suited than Norway to have land-based wind power:

"...it is not necessarily the case that Norway should use all its nature to supply Europe with power [...] And maybe other countries like Denmark for example which is a flat country, where there is easy access to wind, but it is also easy access to the areas. [...] We have already made a huge development of Norwegian nature into hydropower, and in a way have been good at green energy all the time. So it may be, we think it is unreasonable that we should spend a similar area on wind power then. That is also what I say, but maybe we are in a hurry to save the planet and develop, but then Norway may not be as in such a hurry as many others, so it may well be that we could have used energy or our competence then in working out new methods".

"...det er ikke nødvendigvis sånn at Norge skal bruke hele sin natur til å forsyne Europa med kraft [...] Og kanskje andre land som Danmark for eksempel som er et flatt land, der det er lett tilgang til vind, men det er også lett tilgang på arealene. [...] Vi har allerede gjort en kjempeutbygging av norsk natur til vannkraft, og på en måte har vært god på grønn energi hele tiden. Så det er kanskje, vi mener at det er urimelig at vi skal bruke et tilsvarende areal på vindkraft da. Også er det det som jeg sier, men kanskje altså vi har det jo travelt med å redde kloden og utvikle, men altså Norge har det kanskje ikke riktig så travelt som mange andre, så det kan godt hende at vi kunne ha brukt energi eller vår kompetanse da på å jobbe frem nye metoder".

Anthony considered Denmark a better place for land-based wind farms. Norway has already built hydropower, and he thinks it is unreasonable to expect that Norway should use the same land area to build wind farms. John thinks that if Norway cannot get energy from wind power, he does not know where to get it from. The opponents argued that Norway has a lot of hydropower and therefore does not need to contribute to the international climate crisis. Norway has already used a part of nature to make hydropower and should therefore not need to use more nature to create energy, according to John, Robert, and Anthony. Especially not when Norway produces enough energy for themselves, and the rest is sold to other countries.

The licencing process has been criticised for the work the wind farm developers already had put into the applications before the procedure was public and officially started. The developers also have a lot of resources. This makes the decision-making process challenging for others to influence. Anthony reported that when people do not feel heard in the licencing process, it can lead to civil disobedience. The government has made a goal on how many megawatts that is going to come from wind power, and for Anthony, the licencing process felt like a formality:

"... the civil disobedience and the large, public engagement in many places, is

"... den sivile ulydigheten og det store, folkelige engasjementet som har vært

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<sup>10</sup> "ufullstendig teknologi".

partly due to the fact that it is run brutally in the licencing rounds, both from NVE and from developers and from the ministry [...]. So these processes are in a way just to get checked out on the list, that we have made the necessary points. And then it is actually already decided that we will have so and so many megawatts of wind power in this country”.

mange plasser, skyldes delvis det at det kjøres brutalt i konsesjonsrundene, både fra NVE og fra utbyggere og fra departementet [...]. Så disse prosessene er på en måte bare å få sjekket ut på listen, at vi har gjort de nødvendige punktene. Og så er det egentlig bestemt allerede for at vi skal ha så og så mange megawatt vindkraft her i landet”.

Anthony thinks that the reason that the opponents have used civil disobedience in the wind farm protests is due to the licencing process being subjective and wanting to have an outcome where the wind farm licences are granted.

To sum up, the Norwegian government has a goal for energy that should come from renewable sources and the licencing process has therefore been criticised for having a goal to allow wind farms. The informants in the ‘oppose to save nature’ did not feel that wind farms should be built in Norway because of the loss of untouched nature. For example, Anthony thinks that wind farms should be constructed in areas already affected by humans.

## 6.6 Dissatisfaction with the Decision-Making

None of the informants were satisfied with the decision-making process, especially the licencing processes. Some of the informants reported that there is too little knowledge on the consequences of the wind farm. Even though the licencing process has demands to the developer concerning the knowledge needed to be able to get a licence, especially through the Environmental Impact Assessments, not all types of knowledge is included. Experience-based knowledge is not included, and the same goes for feelings and values. This leaves only scientific knowledge left as the main type of knowledge the licencing authorities use when deciding to grant or deny a wind farm license.

When the government set a goal for wind power in Norway, several informants reported that it was difficult to have their voices heard in the process. They felt that they had lost the case before it had even begun because the Norwegian government has set a goal on the amount of energy that is supposed to come from wind power. Some informants have questioned the use of untouched nature to make renewable energy and pointed at the amount of pristine nature already used to make hydropower.

A time-consuming process from the initial plan to a finished wind farm and the lack of listening to others than the developers are examples of critics from the informants to the decision-making process. These factors make it more challenging to influence the decision-making process. This is the same finding that Inderberg et al. (2019) had in their article: it is hard to influence the decision-making processes of others than the developers. According to several informants, this is due to the jump-start and the resources that the developers have got to work on their part of the licencing process. The relevant social groups ‘oppose to save nature’ and ‘oppose and save energy’ have also tried to influence the decision-making process by using arenas that are not formally a part of the licencing process.





## 7 Conclusion

The main aim of the thesis is to investigate the wind power controversy and decision-making on Frøya leading up to the wind farm being constructed in 2019. In chapter 1, I presented the arenas connected to news media and social media and how the relevant social groups used them to enrol other people in the controversy and get attention to the wind farm controversy on Frøya. I presented and discussed the findings in chapter 0 related to the arenas that attempt and succeed in influencing the Frøya wind farm decision-making process.

In this chapter, I shall summarise the findings of the two analysis chapters and discuss them further. I will use the main research question, presented in chapter 1.3, to summarise and conclude this thesis:

- How did the controversy and the decision-making unfold, leading to the Frøya wind farm?

The theoretical framework, presented in chapter 3, consists of the four dimensions relevant social groups, arenas, types of knowledge and concepts of nature (figure 2). I have used them to summarise and discuss the findings from the analysis chapters. I shall also answer the sub-research questions, presented in chapter 3.6, that draws on this theoretical framework:

1. What are the relevant social groups, and what are the arenas they meet in?
2. What kinds of knowledge, and more specifically what conceptions of nature, are included and excluded in various arenas?
3. How do the decisions reflect the answers we found to questions (1) and (2)?

I will address each sub-research question in a separate section in this chapter, and I shall summarise and discuss further research in the last section.

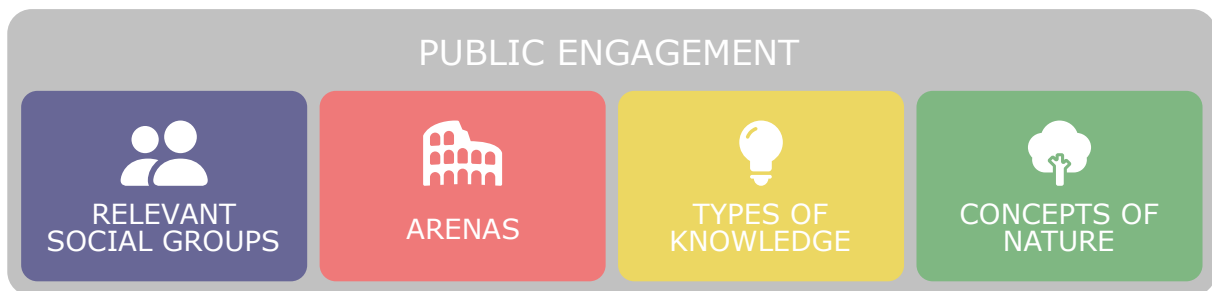


Figure 3 The four dimensions.

### 7.1 The Publics Influence

The relevant social groups, 'oppose to save nature' and 'oppose and save energy', have attempted to impact decision-making through different arenas, like Facebook, news media and protests. None of them succeeded in making changes to the result of the decision-making process. 'Support to benefit from nature' did not try to influence the decision-making process because they believed that the wind farm would be built either way since the government has goals for producing wind power. They also agreed with the outcome and therefore did not feel the need to fight it.

The relevant social groups 'oppose to save nature' and 'oppose and save energy' consist of opponents that have contributed to the Facebook group that has tried to be included in the news media arenas, like newspapers and TV stations. They did not feel there was room for their opinions in the licencing process or the news media arenas. This exclusion from the arenas that the opponents felt led them to form a group on Facebook where they could express their opinions about the Frøya wind farm. This group has been accused of not having any filters so that the members could say whatever they wanted without anyone taking responsibility for it. This could have been avoided if all relevant social groups were included in arenas that impacted the decision-making and valued their opinions.

Suppose there are no arenas where all the relevant stakeholders in the decision-making can meet to be heard and are equally represented. In that case, it is impossible to have a licencing process that is inclusive and that most people perceive as fair. In chapter 3, I use both de Saille (2014) and Inderberg et al. (2019) to describe the consequences of excluding the 'unruly' publics from the public debate and the problems the stakeholders that are not the developer have had in the licencing process for wind farms. My empirical material is consistent with the findings of de Saille and Inderberg et al.. The opponents felt that they were excluded from the licensing process by not being heard due to the asymmetric power relation between the stakeholders. The publics' concern with not being heard in the decision-making processes where the developers get a head start is also problematic. Despite that everyone could speak their mind in the public hearings and meetings that the NVE arranged regarding the licencing process, in the Frøya case, the opponents' meanings were not enough to stop the wind farm's construction. The exclusion has also led the government to make new guidelines for the licencing process considering local dialogue and participation (Meld. St. 28 (2019-2020)).

To sum up, the relevant social groups 'oppose to save nature' and 'oppose and save energy' tried to influence the wind farm decision-making on Frøya so that the wind farm was not built. However, the attempt failed. Since they felt excluded from the news media and did not feel heard in the licencing process, they started a Facebook group to enrol people on the controversy and "enlighten" people. In the beginning, the Facebook group had little or no rules for how the members could discuss the controversy. In some sense, this is more including because no one is deciding what is right or wrong to write. However, the Facebook group has also been criticised for lacking an organised administration leading to improper behaviour and harassment.

## 7.2 Inclusion and Exclusion of Knowledge

The different arenas in the controversy and decision-making have different practices regarding what types of knowledge are recognised or not in the specific arena. The news media arenas allow both scientific knowledge and experience-based knowledge to be a part of their arena. However, the licencing process is only based on scientific knowledge. In the Facebook group, the members decide what is allowed or not through a self-regulation in the group. We must assume that voters in the referenda use knowledge when they vote. However, the methods of this research project offer no perspective on the origin, use, and relative prioritization of this knowledge, and hence we cannot draw any conclusions on it.

Looking at the licensing process and the use of scientific knowledge therein from the perspective of the literature (see chapter 3), some striking tensions emerge. In the

relevant social groups 'oppose to save nature' and 'oppose and save energy', the wind farm opponents did not feel that their opinions on the wind farm were heard. Some of them had a special bond to nature in the wind farm area and thought the turbines destroyed nature there. If the licencing process does not allow experience-based knowledge, one could lose valuable information that could save the government time and money. At the same time, the licencing process is a governmentally controlled process that has got to be done right; this might be the reason why they only include scientific knowledge despite that everyone can send in what they want to say in the public hearings.

Another dilemma in the licencing process is when the science and the experiences that the inhabitants have do not match. The time-consuming licencing process has made the technology in the wind turbines develop and made them taller and visible from large parts of Frøya. Informants reported about their own and other people's experiences with the lights on top of the wind turbines. While the developer and the municipality are working to find a better solution for making the area safe for planes, it is important to take the personal experiences of the inhabitants seriously. The tedious decision-making is also something the government wants to improve in the new guidelines for wind farm licencing (Meld. St. 28 (2019-2020)). By making the decision-making process faster, the government also have a better chance of avoiding problems that occur due to technological development. Balancing fast decision-making with enough time for democratic and inclusive processes is a big challenge when the need for more renewable energy is urgent.

A similar problem occurs when the opponents find research on infrasound and use it to argue against wind turbines. This is a dilemma because it is considered scientific knowledge. And if it is scientific knowledge, why does not the licencing authorities take it into account? What happens if it turns out to be harmful and is not included in the licencing process? The licencing authorities have tried to accommodate this type of scientific knowledge that is not widely supported by the scientific community by making a joint knowledge base, as presented in chapter 1. The joint knowledge base consists of knowledge that the different governmental authorities agree upon and are gathered in one place.

There are also types of knowledge and perspectives that are not recognised in the decision-making and controversy. This is specifically visible in the licencing process where it seems like the NVE only recognized scientific knowledge. In this licencing process it is hard for the relevant social groups to influence the outcome of the process by referring to their emotions, values, and experience-based knowledge. Worst case, this could lead to the licencing authorities deciding based on only one type of knowledge, leading to the wrong decision in the long run. Also, it could lead to distrust from the publics when their point of view is repetitively not considered. At the same time, it is important to ensure that the knowledge which is used to grant or deny licences are correct and not 'fake news'.

As presented in chapter 3, Jasanoff (2018) states that it is important to question scientific knowledge and methods. These dilemmas show that it is crucial to recognise all public concerns. The least the government could do is to investigate the matters and possibly rule them out or make mitigating measures to accommodate them if possible. When the opponents did not feel heard, they started to seek knowledge that would fit

their opinions. It is impossible to know everything. Things we consider good for us today could be harmful tomorrow.

To summarise, the licencing process has a lot of challenges when it comes to figuring out what knowledge is helpful, not relevant, or false. This is a massive job, and the NVE has already started it by making a joint knowledge base for the impacts of wind farms on the environment and societies. There are still effects from wind power that we do not know enough of to say something for sure about today, like the impact on the seabirds local to Frøya. This could have led to another outcome for the wind farm if it was to be decided 20 years from now.

### 7.3 Nature as a Resource or Vulnerable

In both the controversy and the decision-making, the relevant social groups had different conceptions of nature. The group 'oppose to save nature' focuses on the pristine nature that needs to be protected from humans. This relates to the perception of nature as vulnerable. 'Oppose and save energy' also perceives nature and the planet as vulnerable and in need of protection from the impact of humans (Asveld & Stemerding, 2016; Castree & Braun, 1998). On the other hand, the 'support to benefit from nature' perceived nature as a resource either for economic benefits or other benefits like a new area to walk on groomed trails (Asveld & Stemerding, 2016; Castree & Braun, 1998). To the members of this relevant social group, it was acceptable to place the wind turbines in untouched nature.

The main thing the informants disagree about regarding nature is whether it is acceptable to put a wind farm in nature that has been relatively spared by human interference. The relevant social group 'support to benefit from nature' reported that it is acceptable to build wind farms in this nature if they can get something out of it. The other relevant social groups disagree and think that nature should be spared for this type of intervention from humans. Opponents also argued that Norway had used a lot of its untouched nature on hydropower and therefore did not need to use more untouched nature to make wind power.

A dilemma between preserving untouched nature versus using an area of pristine nature to make renewable energy is also a central debate in the wind power controversy on Frøya. As presented in chapter 1, there is a debate concerning the balance between making more renewable energy and saving untouched nature. The United Nations (n.d.-a) has stated that it is urgent to take action to accommodate climate change and as well as saving life on land from destruction. At the same time, public concerns must be taken seriously, and it is important to find a balance between saving an area of untouched nature and preserving the biodiversity in the world and at the same time make a transition into more renewable energy.

### 7.4 Controversy and Decision-Making beyond Frøya

This thesis is a result of qualitative interviews to get a perspective on the wind farm controversy and decision-making on Frøya. My informants are limited in numbers, and I have only studied one wind power controversy, so my findings cannot be used to give a general view of the stakeholders in the Frøya case or generally in energy controversies and decision-making. Therefore, it would be interesting to follow up on the results in this thesis through other research projects. The perspectives from this thesis can be used in other wind farm cases to find out if there are any differences or similarities in the way

inhabitants experienced the wind farm controversy and decision-making in other places than Frøya. Studying other controversies can also determine whether different conceptions of nature offer a meaningful analytic lens in other controversies. However, some of the main findings in this thesis might also relate to other types of controversies and decision-making processes.

The main research question for this thesis is concerned with how the wind farm controversy and decision-making on Frøya has unfolded. The controversy and decision-making have not been without conflict, and people's worldviews matter to how people take positions. This might not only be connected to the actors' view on nature, like in this case, but can relate to other aspects in other controversies. The worldviews, as well as the experienced-based and scientific knowledge, are also received differently in different arenas, and we can only know this by studying the specific arena. Lastly, what happens in various arenas has a consequence for how fair actors perceive a decision-making process, especially when it comes to inclusion and exclusion of knowledge, worldviews, and actors. The Frøya case gives perspectives that could be researched further in other controversies and decision-making processes to ensure that these processes are as fair as possible and are based on diverse types of knowledge. Norway, as a democratic country, must find a balance between taking time and resources to include as many stakeholders as possible in the decision-making processes, and making urgent decisions to combat climate changes.



## References

- Aitken, M. (2009). Why we still don't understand the social aspects of wind power: A critique of key assumptions within the literature. *Energy Policy*, 38(4), 1834 - 1841. <https://doi.org/10.1016/j.enpol.2009.11.060>
- Asveld, L., & Stemerding, D. (2016). *Algae oil on trial. Conflicting views in technology and nature*.  
[https://www.researchgate.net/publication/302395345\\_Algae\\_oil\\_on\\_trial\\_Conflicting\\_views\\_of\\_technology\\_and\\_nature](https://www.researchgate.net/publication/302395345_Algae_oil_on_trial_Conflicting_views_of_technology_and_nature)
- Bertsou, E., & Pastorellia, G. (2017). Technocratic attitudes: a citizens' perspective of expert decision-making. *West European Politics*, 40(2), 430 - 458.  
<https://doi.org/10.1080/01402382.2016.1242046>
- Bucchi, M., & Neresini, F. (2008). Science and Public Participation. In E. J. Hackett, O. Amsterdamska, M. Lynch, & J. Wajcman (Eds.), *The Handbook of Science and Technology Studies* (3rd ed., pp. 449 - 472). The MIT Press.
- Bye, R., & Solli, J. (2007). Vindkraft i Norge: Fra ulønnsom til miljøfiendtlig teknologi? In M. Aune & K. H. Sørensen (Eds.), *Mellom klima og komfort - utfordringer for en bærekraftig energiutvikling* (pp. 85 - 124). Tapir Akademisk Forlag.
- Castree, N., & Braun, B. (1998). The Construction of Nature and the Nature of Construction: Analytical and political tools for building survivable futures. In B. Braun & N. Castree (Eds.), *Remaking Reality: Nature at the Millenium* (pp. 2 - 41). Routledge.
- Collins, H. M., & Evans, R. (2002). The Third Wave of Science Studies: Studies of Expertise and Experience. *Social Studies of Science*, 32(2), 235 - 296.  
<https://doi.org/10.1177/0306312702032002003>
- Collins, H. M., & Evans, R. (2007). *Rethinking expertise*. University of Chicago Press.
- de Saille, S. (2014). Dis-inviting the Unruly Public. *Science as Culture*, 24(1), 99 -107.  
<https://doi.org/10.1080/09505431.2014.986323>
- Energifakta Norge. (2021, 24 November). *Kraftproduksjon*.  
<https://energifaktanorge.no/norsk-energiforsyning/kraftforsyningen/>
- Energy Facts Norway. (2021, 10 September). *Main elements of Norwegian Energy Policy*. Retrieved 9 March 2022 from <https://energifaktanorge.no/en/om-energisektoren/verdt-a-vite-om-norsk-energipolitikk/>
- Ersfjord, E. (2019, 31 July). Vindkraftutbygger er lei av hets: – Grovt, krenkende og helt usaklige personangrep. NRK. <https://www.nrk.no/trondelag/tronderenergi-er-lei-av-hets-fra-aksjonister-pa-froya--grovt-krenkende-og-usaklige-personangrep-1.14641483>

- Fridays For Future. (n.d.-a). *Our demands*. Retrieved 18 May 2022 from <https://fridaysforfuture.org/what-we-do/our-demands/>
- Fridays For Future. (n.d.-b). *Who we are*. Retrieved 7 May 2022 from <https://fridaysforfuture.org/what-we-do/who-we-are/>
- Frøya kommune. (2022a, 17 February). *Fakta - Dette har skjedd - Frøya vindkraftverk 2002 - d.d.* Retrieved 9 March from <https://www.froya.kommune.no/tjenester/naring/froya-vindkraftverk/>
- Frøya kommune. (2022b). *Om Frøya kommune*. Retrieved 26 March from <https://www.froya.kommune.no/tjenester/ny-pa-froya/fakta-om-froya/>
- Garvik, O., & Tjernshaugen, A. (2021). Greta Thunberg. In *Store norske leksikon*. [https://snl.no/Greta\\_Thunberg](https://snl.no/Greta_Thunberg).
- Gray, D. E. (2004). *Doing Research in the Real World*. SAGE Publications.
- Grønskag, H. A. (2019, 31 March). *Det begynte med johannesurt*. Harvest Magazine. <https://www.harvestmagazine.no/pan/det-begynte-med-johannesurt-1>
- Holstad, G. (2019, 22 January). Frøya-ordføreren garanterer ikke ja til folkeavstemning i kommunestyret. *Adresseavisen*. <https://www.adressa.no/nyheter/trondelag/2019/01/22/Fr%C3%B8ya-ordf%C3%B8reren-garanterer-ikke-ja-til-folkeavstemning-i-kommunestyret-18292463.ece>
- iLaks.no. (2018, 28 December). *Lakseoppdrett danker ut annet næringsliv i Trøndelag*. Retrieved 26 March from <https://ilaks.no/lakseoppdrett-danker-ut-annet-naeringsliv-i-trondelag/>
- Inderberg, T. H. J., Rognstad, H., Saglie, I., & Gukbrandsen, L. H. (2019). Who influences windpower licensing decisions in Norway? Formal requirements and informal practices. *Energy Research & Social Science*, 52, 181 -191. <https://doi.org/10.1016/j.erss.2019.02.004>
- Jakobsen, S. B., Mindeberg, S. K., Østenby, A. M., Dalen, E. V., Lundsbakken, M., Bjerkestrand, E., Haukeli, I. E., Berg, M., Johansen, F. B., Weir, D., Krogvold, J., Aabøe, A. M., Arnesen, F., Willumsen, V., Butt, B., Bølling, J. K., Solberg, K. G., Ramtvedt, A. N., Aass, H., . . . Engebretsen, K. H. (2019). *Forslag til nasjonal ramme for vindkraft* (12-2019). [https://publikasjoner.nve.no/rapport/2019/rapport2019\\_12.pdf](https://publikasjoner.nve.no/rapport/2019/rapport2019_12.pdf)
- Jasanoff, S. (2018). Just transition: A humble approach to global energy futures. *Energy Research & Social Science*, 35, 11 - 14. <https://doi.org/10.1016/j.erss.2017.11.025>
- Johannessen, L. E. F., Rafoss, T. W., & Rasmussen, E. B. (2018). *Hvordan bruke teori?: Nyttige verktøy i kvalitativ analyse*. Universitetsforlaget.



- Klima- og miljødepartementet. (2021, 15 October). *Klima og natur henger sammen*. Regjeringen. Retrieved 8 May 2022 from <https://www.regjeringen.no/no/tema/klima-og-miljo/naturmangfold/innsiktsartikler-naturmangfold/klima-og-natur-henger-sammen/id2722684/>
- Lindebø, K., & Silvola, N. M. (2019, 8. July). *Full falske nyheter - strid om vindkraftverk i Trøndelag*. Journalisten. <https://journalisten.no/adresseavisen-fake-news-falske-nyheter/full-falske-nyheter-strid-om-vindkraft-i-trondelag/369838>
- Meld. St. 25 (2015-2016). *Kraft til endring: Energipolitikken mot 2030*. Retrieved from <https://www.regjeringen.no/no/dokumenter/meld.-st.-25-20152016/id2482952/>
- Meld. St. 28 (2019-2020). *Vindkraft på land: endringer i konsesjonsbehandlingen*. Olje- og energidepartementet, Retrieved from <https://www.regjeringen.no/no/dokumenter/meld.-st.-28-20192020/id2714775/>
- Miljødirektoratet. (2021a, 12 November). *Globale utslipp av klimagasser*. Miljøstatus. Retrieved 7 May 2022 from <https://miljostatus.miljodirektoratet.no/tema/klima/global-utslipp-av-klimagasser/>
- Miljødirektoratet. (2021b, 28 May). *Klimaendringer og naturmangfold*. Miljøstatus. Retrieved 8 May 2022 from <https://miljostatus.miljodirektoratet.no/tema/klima/konsekvenser-av-global-klimatendringer/klimatendringer-og-naturmangfold/>
- Motvind Norge. (n.d.). *Historikk*. Retrieved 13 May 2022 from <https://motvind.org/om/historikk/>
- Norges vassdrags- og energidirektorat. (2022a, 7 April). *Direkte fysiske inngrep*. <https://www.nve.no/energi/energisystem/vindkraft/arealbruk-for-vindkraftverk/direkte-fysiske-inngrep/>
- Norges vassdrags- og energidirektorat. (2022b, 8 March). *Konsesjonsbehandling av vindkraftutbygging*. Retrieved 10 March 2022 from <https://www.nve.no/konsesjon/konsesjonsbehandling-og-oppfoelging-av-vindkraft-paa-land/konsesjonsbehandling-av-vindkraftverk-paa-land/>
- Norges vassdrags- og energidirektorat. (n.d.). *Frøya vindkraftverk*. Retrieved 4 March 2022 from <https://www.nve.no/konsesjon/konsesjonssaker/konsesjonssak/?id=122&type=A>
- Norsk senter for forskningsdata. (n.d.). *Fyll ut meldeskjema for personopplysninger*. <https://www.nsd.no/personverntjenester/fyll-ut-meldeskjema-for-personopplysninger>
- NRK. (n.d.). *Vindkraftutbygging på Frøya*. Retrieved 11 November from <https://www.nrk.no/trondelag/vindkraftutbygging-pa-froya-1.14504302>

- NTB. (2019, 13 May). Demonstranter fortsette kampen mot vindmøller på Frøya. *Adresseavisen*  
<https://www.adressa.no/nyheter/innenriks/2019/05/13/Demonstranter-fortsetter-kampen-mot-vindm%C3%B8ller-p%C3%A5-Fr%C3%B8ya-19030427.ece>
- NTE Energi, & TrønderEnergi. (2012). *Frøya vindkraftverk: planendingssøknad*.  
<https://webfileservice.nve.no/API/PublishedFiles/Download/200702919/533936>
- NVE. (2022, 30 March). *Hvordan påvirkes miljø og samfunn av vindkraft?*  
<https://www.nve.no/nytt-fra-nve/nyheter-konsesjon/hvordan-paavirkes-miljoe-og-samfunn-av-vindkraft/>
- Nærø, A. F., & Arnesen, M. (2019, 12 July). Maskerte personer tok seg inn på vindkraftverket på Frøya. *VG*.  
<https://www.vg.no/nyheter/innenriks/i/9vxgz9/maskerte-personer-tok-seg-inn-paa-vindkraftverket-paa-froeya>
- O'Leary, Z. (2014). *The essential guide to doing your research project*. SAGE Publications.
- Olje- og energidepartementet. (2019a, 17 October). *Skrinlegger nasjonal ramme for vindkraft* [Press release].  
<https://www.regjeringen.no/no/dokumentarkiv/regjeringen-solberg/aktuelt-regjeringen-solberg/oed/nyheter/2019/skrinlegger-nasjonal-ramme-for-vindkraft/id2674311/>
- Olje- og energidepartementet. (2019b). *Trønder Vind AS- klager på NVEs godkjenning av detaljplan og miljø-, transport- og anleggsplan for Frøya vindkraftverk*.  
<https://webfileservice.nve.no/API/PublishedFiles/Download/201841219/2806396>
- Pinch, T., & Bjiker, W. E. (2012). The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other. In W. E. Bjiker, T. P. Hughes, & T. Pinch (Eds.), *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology* (Anniversary ed., pp. 11 - 44). The MIT Press.
- Rasmussen, E. (2019, 2 April). 78,7 prosent sier nei til vindkraft i folkeavstemning. *Adresseavisen*. <https://www.adressa.no/nyheter/trondelag/2019/04/02/787-prosent-sier-nei-til-vindkraft-i-folkeavstemning-18784391.ece>
- Rosvold, K. A. (2019). Vindkraftverk. In *Store Norske Leksikon*.
- Rowe, G., & Frewer, L. J. (2005). A Typology of Public Engagement Mechanisms. *Science, Technology & Human Values*, 30(2), 251 - 290.  
<https://doi.org/10.1177/0162243904271724>
- Saglie, I., Inderberg, T. H. J., & Rognstad, H. (2020). What shapes municipalities' perceptions of fairness in windpower developments? *Local Environment* 25(2), 147 - 161. <https://doi.org/10.1080/13549839.2020.1712342>

- Scientist for Future International. (n.d.-a). *About*. Retrieved 16 May 2022 from <https://scientists4future.org/>
- Scientist for Future International. (n.d.-b). *Facts*. Retrieved 19 May 2022 from <https://scientists4future.org/we-are/facts/>
- Seidman, I. (2006). *Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences* (3rd ed.). Teachers College Press.
- Skjølvold, T. M. (2015). *Vitenskap, teknologi og samfunn: en introduksjon til STS*. Cappelen Damm Akademisk.
- Solberg, E. L., Skei, L., & Befring, Å. M. (2019, 17 October). Regjeringen dropper nasjonal rammeplan for vindkraft. NRK. <https://www.nrk.no/norge/regjeringen-dropper-nasjonal-rammeplan-for-vindkraft-1.14744999>
- Solli, J. (2010). Where the eagles dare?: Enacting resistance to wind farms through hybrid collectives. *Environmental Politics*, 19(1), 45 - 60. <https://doi.org/10.1080/09644010903396077>
- St.meld. nr. 29 (1998-99). *Om energipolitikken*. Olje- og energidepartementet, Retrieved from <https://www.regjeringen.no/no/dokumenter/Stmeld-nr-29-1998-99-/id192287/>
- Statistisk sentralbyrå. (2020, 8 July). *Syv lokale folkeavstemninger i 2019*. Retrieved 23 March 2022 from <https://www.ssb.no/valg/artikler-og-publikasjoner/syv-lokale-folkeavstemninger-i-2019>
- Thagaard, T. (2013). *Systematikk og innlevelse: En innføring i kvalitativ metode* (4th ed.). Fagbokforlaget.
- Totland, A. (2021). *Vindmøllekampen: Historia om eit folkeopprør*. Samlaget.
- Trana, K., Sae-Know, N., & Nilsen, P. M. (2019, 28 August). Motstandsbevegelsen. NRK. <https://www.nrk.no/trondelag/xl/vindkraftmotstanden-i-norge-oket-noen-aksjonister-gjor-alt-de-kan-for-a-sabotere-utbyggingen-1.14641582>
- TrønderEnergi. (2019, 3 January). *TrønderEnergi og Stadtwerke München innleder fornybar-samarbeid* [Press release]. <https://tronderenergi.no/aktuelt#/pressreleases/troenderenergi-og-stadtwerke-munchen-innleder-fornybar-samarbeid-2819695>
- TrønderEnergi. (n.d). *Frøya vindpark*. Retrieved 17 September from <https://tronderenergi.no/vind/froya>
- United Nations. (2022, 4 April). *Secretary-General's video message on the launch of the third IPCC report*. <https://www.un.org/sg/en/content/sg/statement/2022-04-04/secretary-generals-video-message-the-launch-of-the-third-ipcc-report-scroll-down-for-languages>

- United Nations. (n.d.-a). *Goal 13: Take urgent action to combat climate change and its impacts*. Retrieved 7 May 2022 from <https://www.un.org/sustainabledevelopment/climate-change/>
- United Nations. (n.d.-b). *Life on Land*. Retrieved 16 May 2022 from <https://www.un.org/sustainabledevelopment/biodiversity/>
- Vasstrøm, M., & Lysgård, H. K. (2021). What shapes Norwegian wind power policy? Analysing the constructing forces of policymaking and emerging questions of energy justice. *Energy Research & Social Science*, 77. <https://doi.org/10.1016/j.erss.2021.102089>
- Vasstrøm, M., Overvåg, K., Clausen, L. T., & Lysgård, H. K. (2021, 3 September). *Vi må diskutere hva som rettferdiggjør utbygging av vindkraft i norsk natur*. Forskersonen.no. <https://forskersonen.no/energi-klima-kronikk/vi-ma-diskutere-hva-som-rettferdiggjør-utbygging-av-vindkraft-i-norsk-natur/1904954>
- Warren, C. R., Lumsden, C., O'Dowd, S., & Birnie, R. V. (2005). 'Green on Green': Public Perceptions of Wind Power in Scotland and Ireland. *Journal of Environmental Planning and Management*, 48(6), 853 - 875. <https://doi.org/10.1080/09640560500294376>
- Wynne, B. (1992). Misunderstood misunderstanding: social identities and public uptake of science. *Public Understanding of Science*, 1(3), 281 - 304. <https://doi.org/10.1088/0963-6625/1/3/004>
- Wynne, B. (2003). Seasick on the Third Wave? Subverting the Hegemony of Propositionalism: Response to Collins & Evans (2002). *Social Studies of Science*, 33(3), 401 - 417. <https://doi.org/10.1177/03063127030333005>
- Aasland, T. (2022, 22 April). *En nødvendig gjenåpning for vindkraft*. Regjeringen. <https://www.regjeringen.no/no/aktuelt/en-nodvendig-gjenapning-for-vindkraft/id2909724/>

