The Green Transition in Arendal: A Case Study of Socio-Technical Imaginaries and Development Strategies

Evaluating the Impact of Morrow Batteries on Local Policies, Community Perceptions and Sustainable Growth

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Sammendrag

Denne masteroppgaven ønsker å undersøke hvordan EU's diskurser om grønn omstilling påvirker sosiotekniske forestillinger og exogene utviklingsstrategier i lokale utviklingsprosjekt. Morrow Batteries valgte Arendal som sin lokasjon for etablering av batterifabrikk, og det er forventet at dette prosjektet vil ha en vesentlig betydning for Arendal som kommune, både sosialt, økonomisk og miljømessig. I en så stor utviklingsprosess er det interessant å se hvilke diskurser og argumenter som påvirker en slik etablering, og hvordan de ulike dynamikkene mellom internasjonale organisasjoner og aktører påvirker på kommuneplan. Forskningen har dermed som hensikt å forstå hvordan lokale utviklingsstrategier påvirkes av dominerende diskurser om bærekraft og grønn omstilling, og hvilken betydning dette har for lokal utvikling i Arendal kommune.

Oppgavens teoretiske rammeverk består hovedsakelig av tre teoretiske perspektiver: Diskursteori hvor å forstå hvordan språk og kommunikasjon former og konstruerer en hegemonisk struktur i den grønne omstillingen, sosiotekniske forestillinger for å utforske kollektive visjoner og forventninger rundt teknologiske initiativer og deres samfunnsmessige innvirkning, og eksogene utviklingsstrategier for å undersøke betydningen av eksterne ressurser i lokal og regional utvikling, og hvordan globale og lokale trender og dynamikker henger sammen. For å svare på forskningsspørsmålene benytter oppgaven seg av en kvalitativ tilnærming gjennom dokument- og diskursanalyse, semi-strukturerte intervjuer og deltakende observasjon. Denne trianguleringsmetoden gir omfattende innsikt i ulike interessenters perspektiver og holdninger til Morrow Batteries-prosjektet, og også en dypere kunnskap i tematikken i oppgaven. Oppgaven bygger på data fra semi-strukturerte intervjuer med tre nøkkelpersoner, dokumentanalyse av artikler, intervjuer og leserbrev i lokale aviser, et filmopptak av et digitalt folkemøte samt deltakende observasjon på seminarer relatert til Morrow Batteries. Disse kildene gir et godt grunnlag for informasjon og narrativer som belyser forskningsspørsmålene.

Funnene i oppgaven viser hvordan sosiotekniske forestillinger i Arendal reflekterer bredere diskurser om grønn omstilling definert av globale aktører som EU, og at disse diskursene har en stor påvirkning på hvilke utviklingsstrategier lokale myndigheter benytter seg av i møte med grønn industri og utvikling.

Abstract

This master's thesis wants to investigate how the EU's discourses on green transition affect socio-technical imaginaries and exogenous development strategies in local development projects. Morrow Batteries chose Arendal as its location for the establishment of a battery factory, and it is expected that this project will have a significant impact on Arendal as a municipality, both socially, economically and environmentally. In such a large development process, it is interesting to see which discourses and arguments influence such an establishment, and how the various dynamics between international organizations and actors influence at municipal level. The purpose of the research is thus to understand how local development strategies are influenced by dominant discourses about sustainability and green transition, and what significance this has for local development in Arendal municipality.

The thesis' theoretical framework mainly consists of three theoretical perspectives: Discourse theory to understand how language and communication shape and construct a hegemonic structure in the green transition, socio-technical imaginaries to explore collective visions and expectations around technological initiatives and their societal impact, and exogenous development strategies for to examine the importance of external resources in local and regional development, and how global and local trends and dynamics are connected. To answer the research questions, the thesis uses a qualitative approach through document and discourse analysis, semi-structured interviews and participant observation. This triangulation method provides extensive insight into various stakeholders' perspectives and attitudes towards the Morrow Batteries project, and also a deeper knowledge of the subject matter in the thesis. The assignment is based on data from semi-structured interviews with three key people, document analysis of articles, interviews and letters to readers in local newspapers, a film recording of a digital public meeting as well as participant observation at seminars related to Morrow Batteries. These sources provide a good basis for information and narratives that illuminate the research questions.

The findings in the thesis presents how socio-technical imaginaries in Arendal reflect broader discourses about green transition defined by global actors such as the EU, and that these discourses have a major influence on which development strategies local authorities use in the face of green industry and development.

Table of Content

Chapter 1.0 Introduction

As a means of increasing the pace of the green transition in the business world, following intensive efforts from the government (Norwegian Ministry of Climate and Environment, 2023), several cities, including Arendal, have been eager to replace fossil solutions for fuel and energy with electrical solutions and to facilitate green industry (Arendal kommune, 2023). Local urban planning and development in Arendal, as in many other Norwegian cities, is undergoing a green transition paradigm, where Arendal is now undergoing a broad socio-economic change process as a result of the green transition (Arendal kommune, 2023). In its municipal sub-plan for energy and climate for the period 2020-2023, the municipality aims to be a pioneering municipality for climate, energy and sustainable development, and emphasizes that it should be Norway's most climate-friendly municipality of its size (Arendal kommune, 2020, p. 30). One of the strategies to realize this vision has been to support sustainable business initiatives in the municipality, by making it attractive for green industry to establish (Arendal kommune, 2020, p. 30). The municipality's willingness and available resources to support green investments have attracted more investors and entrepreneurs. Morrow Batteries, which in 2020 decided to establish itself and its battery factory in Arendal, is possibly the largest business establishment in recent times.

The adaptation to electrical solutions and sustainable energy sources have recently been considered key factors in meeting the complex challenges that urban growth and climate change will bring, both at the local and regional level. In light of this situation, an increasing demand for efficient and sustainable energy solutions, in this case lithium batteries, has become an important topic, and the demand is occurring more and more frequently among several countries and actors. Lithium batteries (LIBs) have in many ways established themselves as the preferred energy source in the transport sector due to its characteristics such as energy density, low self-discharge, speed and long lifecycle (Lai et al., 2022, p. 1), and it is this the energy source Morrow wants to develop further. With their new production model, they aim to set the industry standard and pave the way for how the batteries of the future will be produced. Arendal municipality, as the regulatory authority, has decided to support this initiative with both plot area, facilitation and regulations in order to make the production as sustainable and economically competitive as possible (Arendal kommune, 2023).

The project is a good example of how the interaction between a municipality's vision and strategy for a green transition meets private initiatives of the size and scope of Morrow Batteries' ambitions. In such a context, as the project has so far shown, extensive socio-economic changes, regulations and priorities are required in order to be able to realize and reconcile visions and goals between a public authority such as Arendal municipality, with an international business actor such as what Morrow Batteries has ambitions to be. General local planning, and especially within the framework of the green shift, involves activities that include different actors, conflict-filled discourses and interests, political institutions and civil society (Jensen, Andersen, Hansen & Nielsen, 2007, p. 12). This interaction allows for the exploration of inherent perceptions about the green shift and how a project like Morrow Batteries is understood in this context by decision-makers, investors and other stakeholders in the municipality.

1.1 Problem statement and research questions

The green transition brings complex issues and challenges that local authorities must navigate through. At the local and regional level, it can be seen that the green shift can in many ways be described and understood as the interaction between political actors, private actors and citizens. Morrow Batteries stands as a good example of when local regulatory authorities, with the aim and vision of driving sustainable business development in the local and regional space, collaborate with private actors with the aim of utilizing financial resources, expertise and networks as an initiative as Morrow Batteries includes. At the same time, such initiatives do not only bring benefits, as projects on Morrow Batteries' scale require enormous restructuring of resource management, priorities, planning regulation and development. The municipality has had to allocate large resources, in the form of financial funds, land and infrastructure, to this project, without any form of guarantee that the project will contribute to a greener transition and development in the municipality.

(Figur 1: Eyde 1, Eyde 2 & Eyde 2. Morrow Batteries, 2023).

While investments in green technology, such as the production of electric batteries, play a central role in the transition towards renewable energy, battery production differs from other green projects such as wind power. This is due to the need for large quantities of resources that are rarely found locally in the areas where such projects and factories are established. In our example, Morrow Batteries is dependent on necessary resources for battery production, such as raw materials, specialized knowledge and qualified labour, from sources outside Arendal and Norway, as these resources are difficult or expensive to acquire locally at the moment. At the same time, this example illustrates so-called "exogenous development strategies", a term introduced to us by Pike, Rodriguez-Pose & Tomaney's “Local and regional development” (2017). In this strategy, political decision-makers and private actors use resources from external sources, such as raw materials, expertise and labour, to promote the development of local and regional communities and economies (Pike, Rodriguez-Pose & Tomaney, 2017). In such cases where one is dependent on external resources, several ethical dilemmas can arise related to, for example, resource distribution, working conditions, mutual dependence and development, especially where the resources are extracted from vulnerable or conflict-ridden areas.

Furthermore, through Foucault's (1994) theory of epistemology, it opens up for discussion about how such technology choices, shaped by hegemonic discourses and norms about the green transition, can contribute to shaping our understanding of reality about our energy landscape (Hudlet-Vazquez et al., 2023, p. 34). This approach will attempt to shine a light on how we can understand green investments as not only technological choices, but also as part of a larger discursive and epistemic landscape that shapes our collective societal development. Hence, the concept of sociotechnical imaginaries becomes relevant in the discussion of how we can understand the establishment and the local decision-makers' investment in Morrow Batteries as not only a green investment, but also as a manifestation of the dominant discourses that shape our perception and understanding of climate challenges and how these can be solved.

Morrow Batteries as a case in this research has been chosen on the basis of its relevance as an initiative that represents a concrete and significant implementation of a green transition in the business world. At the same time, the case provides a unique opportunity to explore the interaction between local decision-makers and private business actors. This includes political decisions, regulations and intensives that influence and enable private ventures in green technology development. The case also provides an arena for analysing discourses around sustainable development and green technology, and how these discourses manifest and influence political decisions, practices, ideas and expectations for various business ventures. After reflecting on the research problem and the theoretical framework, we want to explore the following research questions:

I. How do Arendal municipality policies and commitment toward the Morrow Batteries initiative in Arendal reflect EU's discourse about the green transition, and how do these discourses about the green transition affect local sociotechnical imaginaries and exogeneous development strategies in Arendal?

1.1.2 The purpose of the research

The research wants to explore how the prevailing attitudes and practices in Arendal, both at political, business and civilian decision-making level, shape the approach to sustainable energy solutions in the municipality, where the motivational drivers of political decision-makers, investors and the local population will reveal which discourses the other stakeholders have related to in elections of alternatives in the face of climate challenges, in the context of the green transition in Arendal municipality. At the same time, exogenous development strategies, where new technology, knowledge and practice are introduced locally from external sources, can fundamentally change the municipality's perception of technological progress and its role in social development. Arendal municipality's ambitions to be a pioneering municipality for climate, energy and sustainable development, through Morrow Batteries' success in introducing new green technology and industry, can influence and shape the local community's and the region's perspective on the potential and opportunities that exist in such ventures. Thus, contribute to a transformation in the socio-technical ideas, expectations and visions of the local community and the region for future sustainable development in the municipality.

The main goal of this research will thus be to uncover and analyse the underlying political priorities and motives that underlie the venture and establishment of Morrow Batteries in Arendal municipality, which will involve evaluating the political, social and economic notions and expectations for this ambitious venture among the various stakeholders. The research also wants to explore how exogenous growth strategies, such as the establishment and investment in Morrow Batteries' technology and business model, reshape the local socio-technical notions of what opportunities exist in the investment of such initiatives for the local community and the region. The research will hopefully further contribute to understanding how local political decisions reflect and at the same time interact with wider discourses and notions of sustainable development and how this interaction affects development in Arendal municipality. This could provide valuable insight for decision-makers and society as a whole, in the understanding of how discourses, ideas, and thus expectations influence and shape local social development.

Finding answers to these questions will hopefully provide better insight into how socio-technical notions influence the view of decision-makers, investors and the local population on Morrow Batteries' establishment in Arendal. This understanding will also illuminate how these perceptions mirror and influence wider social and technological trends. Furthermore, the study will contribute to assessing the extent to which hegemonic discourses about green technology, especially in connection with projects such as Morrow Batteries, influence society's acceptance and support for such initiatives.

1.2 Structure

This thesis is structured through six chapters. The first chapter presents an introduction to the thesis, its problem statement and the research questions. Chapter two explains the conceptualization of the purpose of the thesis, the political investments in renewable energy and sustainable development and its conflicts, our personal motivation for the thesis, previous research in the field and the position of the thesis in this research. Chapter three presents the theoretical framework that can help us understand the thesis' problem statement with the main emphasis on terms such as the green transition, socio-technical imaginaries and exogenous growth strategies. In chapter four, we make account of the research methods that have been used in this thesis to obtain empirical data material and other sources that have been used to answer the problem, what type of data that has been obtained and the background for choosing these, what quality requirements we have set for the data collected and the ethical assessments we made before, during and after the use of the method. Chapter five presents an analysis where the empirical findings are linked to relevant theory to gain a better understanding of the problem statement, and which can hopefully help us answer the thesis' research questions. Finally, chapter six concludes the study's empirical findings in the light of literature and theory.

Chapter 2.0 Contextualization

The thesis covers a variety of themes. However, the contextual overview of the thesis will try to highlight how Arendal municipality's investment and commitment in the establishment of Morrow Batteries can be understood as a broader regional strategy and sustainable development discourse. The thesis will also try to uncover how local residents' sociotechnical imaginaries may be influenced by broader discourses on sustainable development, highlighting the importance of understanding how dominant discourses not only shapes our perception and understanding of environmental challenges, but also what technological solutions are appropriate to pursue in the sustainable development paradigm. However, the first part of this chapter will highlight the foundational context and key catalysts that drive, namely the green transition. In relation to this, a critical exploration on the evolving narrative of sustainable development will be illuminated to discuss how dominant discourse about the green transition, advocated by international institutions, such as the EU and the Norwegian government, shapes and influences societal perceptions on environmental challenges and what technological solutions to pursue will be emphasized and provided. The second part will highlight the key catalysts that drivers of the advancement of green industrial initiatives and exogenous development strategy which is key to Morrow Batteries business model and the municipality's development strategy. Therefore, an elucidation of European battery strategy, Norwegian battery strategy and Arendal municipality's political commitment toward the green transition and Morrow Batteries, will be provided. We end this chapter by discussing conflict in the green transition, to illuminate the political aspect of local development and planning, in the context of the green transition.

2.1 The Green Transition

The contextual ground of our thesis is based on the green transition, a transition which could be viewed as a collective commitment to strategic environmental and economic goals and interests. Emphasizing the European Training Foundation's definition, the transition refers to *"a comprehensive shift towards environmentally sustainable growth and an economy that*

minimizes reliance on fossil fuels and reduces overconsumption of natural resources, with the aim of addressing urgent climate and environmental challenges, while fostering economic opportunities and sustainable development" (European Training Foundation, 2022).

To understand the contextual ground of our thesis it becomes necessary to explore from what background the pursuit of sustainable technological solutions in Norway and Europe as a whole has led to Arendal municipality's investment and commitment to the development of a battery factory and value chain. In this regard a basic introduction to the term sustainable development is needed, with emphasis on how sustainable development discourse have evolved from only focusing on elevating human wellbeing through resource consumption and exploitation, to also include a long-term consequence perspective on our development efforts, which influence modern sustainable development discourse, policy and strategy.

Initially, earlier emphasis on development, known in academia as modernization theory, argued through Walt Rostow, stressed the idea that there was one path to 'development' and that was through economic growth and technological advancement, with an expectation of fostering unlimited economic growth through technological advancement and inclusive economic systems (Willis, 2005). The theory, dominant in the 1950's led to significant growth in Europe and the US, as a result of rapid industrialization, technological advancement, and increased consumerism during post-war reconstruction era, propelled and driven by different economic instruments such as Transnational corporations (TNC) and Global value chains (Du Pisani, 2007) (Willis, 2005). However, amid the euphoriant period of modernization in the 1950's and 1960's a worldwide recession occurred, following the wake of the first oil crisis in the late seventies (1973-1976) (Du Pisani, 2007). The events worked as a wake-up call for many as the idea and expectations of unlimited economic growth were dampened, consequently policymakers started to doubt the existing development strategy, and eventually started to explore the underlying cause of the issue. This, takes us to the 1970's and the well-known report "Limits to growth" of the Club of Rome, which constituted of 30 individuals, including eminent scientist and economists of that time, warning that the Earth had limited supply of physical resources and that exceeding the limits of exploitation could end in catastrophe, as the authors came to the apocalyptic conclusion:

''If the present growth trends in world population, industrialization, pollution, food production, and resource depletion continue unchanged, the limits to growth on this planet will be reached sometime within the next one hundred years. The most probable result will be a rather sudden and uncontrollable decline in both population and industrial capacity''.
(Meadows et al, 1972 in Du Pisani, 2007, p. 90).

In relevance for the understanding of the thesis' contextual frame, 4 focus points will be highlighted from the report that have influenced modern sustainable development discourse:

1. Limits to growth: The core thesis of the report argues that the Earth has finite resources and ecological thresholds that cannot support indefinite growth in production, consumption and population growth. As the limits are approached then the global system will face challenges and conflicts, potentially leading to a decline of both industrial capacity as the resources has been overexploited and a population decline because of resource shortage (Meadows et al., 1972).
2. Industrialization: The report also highlights the concern that industrial activities lead to greater consumption of resources (both renewable and nonrenewable raw material and energy), consequently leading to increased pollution. As the technologies developed in the 1950's and 1960's was designed to extract and process resources at a much faster pace to keep up with the growing population and consumerism culture that was evolving in the world. Illuminating the concern that while industrialization was a core catalyst to economic growth and improving living standards, it also intensified the strain on Earth's ecosystems and resources (Meadows et al., 1972). Functioning, one could argue, as both a short-term solution, but also as the cause of a growing concern, like a two-edged sword.
3. Resource depletion: A concern of a future scenario of resource depletion is emphasized in the report, highlighting the consequence of irresponsible resource extraction and consummation, especially in regard to consummation of nonrenewable resources, such as fossil fuels and other rare minerals at rates that exceed their natural reproduction capabilities. If unchecked, the report argues, can lead to shortages in important earths, higher costs and eventually leading to conflict over remaining important resources (Meadows et al., 1972).
4. Pollution: An important point highlighted in the report in relevance for our thesis, is the focus on pollution. The report illuminates the concern that an accumulation of pollutants in the environment, such as our waters, sea, nature, and the

> atmosphere can lead to degradation of natural habitats, harm human and animal health, also consequently leading to climate change, and with it, environmental challenges. This focus point tries to highlight the concern that if unchecked, pollution can reach levels that the environment can't digest/ cleanse naturally, consequently leading to severe ecological and health consequences (Meadows et al., 1972).

The purpose of this report as said by authors was to;
"…foster understanding of the varied but interdependent components economic, political, natural, and social that make up the global system in which we all live; to bring that new understanding to the attention of policymakers and the public worldwide; and in this way to promote new policy initiatives and action." (Meadows et al., 1972, p. 9).

The report, one could argue, called for a reevaluation of a growth-focused economic oriented development discourse and policies, suggesting an adaptation of more sustainable practices, more holistic oriented technological innovations, and changes in consumption patterns to avoid meeting these limits too fast. Also, the report highlights the importance of global cooperation and the formation of long-term strategies and policies to ensure a more stable and sustainable future scenario. Paving the way for what developed to become sustainable development discourse.

In 1987 the United Nation (UN) commissioned a group of 22 people from both developed and developing countries to identify long-term environmental strategies for the international community (Du Pisani, 2007). The commission, famously known today as the Brundtland commission submitted the report "Our Common Future", a groundbreaking report that changed how we understand and develop sustainable development policies by defining sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (Du Pisani, 2007). This definition linked together the concept of economic development, environmental sustainability, and social equity, as the report expressed the belief that those components were simultaneously possible, highlighting the three fundamental components of sustainable development discourse: economy, society and the environment (Du Pisani, 2007, p. 92). An important aspect to this report which later was strengthened by a series of ecological disasters at that time, was the shift of treating development as purely an economic activity of which the

responsibility was on economic instruments and market forces. After this report, sustainable development was discussed as a major political goal, as the new consensus that have grown out of the adaptation of the ideas of progress, growth and development in the 1980's, Mitcham (1995) in Du Pisani (2007) argues, emphasized the idea that to be sustainable, development had to 'improve economic efficiency, protect and restore ecological systems, and enhance the well-being of all peoples' (Du Pisani, 2007, p. 93).

The evolution of sustainable development discourse, as briefly described here, reflects a revolutionary shift towards the understanding and later strategies toward development. This change of focus from a singular focus on economic growth and industrialization, as advocated by early modernization arguments, to a more nuanced and holistic approach that integrates wider and interconnected dimensions of society, more specifically environmental consideration, responsible economic growth and social equity has proven to be pivotal in modern sustainable development agenda. The important works of "The limits to growth" and Brundtland commission's "Our common Future" have set the premise for an important paradigm shift, playing central roles in reshaping and widening the narrative and practices around development, by defining sustainable development as *"development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (Du Pisani, 2007, p. 92).* An important aspect of this definition, is that it linked together the concept of economic development, environmental sustainability, and social equity, highlighting the critical importance of considering the finite nature of our planet's resources and the need for development policies and strategies to have more holistic approach, grounded in not just short term goals and gains, but also a responsible consideration of the impact today's actions can have for future generation's wellbeing and opportunities. The report expressed the belief that those components were simultaneously possible, highlighting what would become the three fundamental components of sustainable development discourse, emphasized by the UN: economy, society, and the environment (Du Pisani, 2007, p. 92).

The European Union eventually adopted the Brundtland Commission's three fundamental components of sustainable development: economy, society, and the environment, by integrating its core values in the Union's strategic plan, known today as the European Green Deal (European Commission, 2024). With the aim to make the continent climate neutral by 2050, the Green Deal focuses on boosting renewable energy initiatives, improving energy

efficiency, promoting a circular economy, and ensuring a just transition that supports affected societal challenges and regions. This, as means to decouple economic growth from unsustainable resource use, and to reduce greenhouse gas emissions (European Commission, 2023).

The green transition can, therefore, be understood to build on the evolving narrative of sustainable development discourse, which emphasizes the Brundtland Commission's three fundamental components of sustainable development: economy, society, and the environment. Furthermore, as we have discussed, can the green transition be understood as a discourse that reflects a broader framework and strategy, influenced, and shaped by overarching institutions, notably the European Union's Green Deal strategic plan, which emphasizes the European battery strategy at the forefront of the surge (European Commission, 2024). At the same time can the green transition also be understood as a discursive process, in the sense that discourse itself evolves over time, because language is used in different ways over time, which changes the meanings of words and concepts (Jørgensen & Phillips, 2002).

2.1.1 Political commitment for a sustainable battery industry

Arendal municipality's commitment to the establishment and investment in Morrow Batteries, and an integrated battery producing value chain did not happen in a vacuum, as illuminated in our previous take on the evolution of sustainable development paradigm. This move is anchored in Europe's and Norway's pursuit for an economic growth path in alignment with a collective commitment to sustainable development goals. With this understanding in mind, Morrow Batteries' establishment and the political commitment taken by the municipality can be understood as a microcosm in the European green shift paradigm and strategies. One of these strategies has been to establish an efficient battery value chain, as means to grow a resilient battery industry in Europe, with the growing concern that by not doing so the Chinese established dominance in this industry will become a threat to Europe's competitiveness and aspirations to become self-reliant and independent in this industry. The rapidly growing demand and forecasted future economic potential for these batteries, in Europe and their partners, has also altered a race for many companies to seek economic profit potentialities, but also governments to foster attractive conditions to attract battery

manufacturers to establish themselves in their municipalities or regions as means to grow their economy and create work for their residents. Another argument to grow a strong battery industry in Europe is of ecocentric character, as not being reliant on Chinese produced batteries and resources, and instead producing batteries on European soil, brings both cost effective benefits and at the same time minimizes environmental footprints in the process.

2.1.2 The European battery strategy: A broader perspective

To be able to better understand the Norwegian battery strategy and Arendal municipality's role in this green industrial race, an essential breakdown of the European battery strategy and established instruments, with the purpose of ensuring collective cooperation and goal achievement, are needed to get a broader understanding and perspective. Therefore, a short but thorough breakdown of the European strategy and established instruments, in this regard alliances, will be provided.

The development of the battery industry in Europe has, according to the Norwegian government, been catalysed by Asia's dominance in this industry, coupled with Europe's ambitions to capitalize on the opportunities presented by this industry, both in regard to economic interests as well as environmental oriented interests. It was forecasted in 2022, when the Norwegian battery strategy was formulated, that by 2030, the market for lithium batteries would grow to be approximately 20 times larger than it is today, where the EU have the ambition of producing about 30 percent of these batteries by 2030, as of 2022, only a portion, around eight to nine percent of the lithium batteries produced globally had European industrial origin (Borkamo, 2022) (Norwegian Ministry of Industry and Fisheries, 2022, p. 6). With the ambition to change this situation and meet their goal, the EU established in 2017 The European Battery Alliance (EBA). Shortly after, the European Union unveiled its Strategic Action Plan on Batteries in 2019, outlining six key areas of focus. These included guaranteeing raw material access, establishing a comprehensive battery value chain in Europe, taking the lead globally in battery research and development, implementing strict sustainability regulations, and establishing political frameworks both inside and outside the EU (Publications Office of the European Union, 2019).

The European commission identified three key priorities that needed collective action in the following years to be able to achieve EU's ambitious goal of becoming the world's biggest lithium battery cell maker after China by 2025:

Firstly, to accelerate the development and implementation of the battery industry's regulations and standards, with special emphasis of the challenges that may arise as a result of significant increases in production capacity within the region, and also to enable European producers to compete globally on sustainability and circular economy principles beyond just cost (Colthorpe, 2021).

Further, to enhance local sourcing, processing of raw materials, and manufacturing of key components. The goal is to encourage member states to explore domestic investment and hosting opportunities, with the potential for stricter application and eventual phasing out of customs duty suspensions for battery material imports as the intra-European supply chains develop (Colthorpe, 2021).

Lastly, to address the critical skills gap in Europe's workforce, which risks a shortage, according to Šefčovič, of approximately 800,000 qualified workers, that could threaten their aspirations to achieve their goal by 2025. This, by initiating dedicated training projects, where the plan was to launch a platform in April 2021, to facilitate cross-border training efforts, with EIT InnoEnergy leading the preparation of educational programs for member states to address this (Colthorpe, 2021).

To address these three key priorities, and to foster collective cooperation between relevant stakeholders, the European commission adopted the cluster approach, as means to enhance efficiency, innovation, and competitiveness for European industrial ambitions. The aim is to leverage local strengths, foster collaboration, and facilitate knowledge sharing among relevant stakeholders, such as companies, governments, science hubs and investors, as a way to form a robust, self-sufficient battery industrial complex in Europe (Norwegian Ministry of Industry and Fisheries, 2022, p. 17). The cluster approach in regard to the European context, involves creating synergies among various stakeholders, where different actors, such as companies, research institutions, governments and investment instruments within the cluster are assigned specific roles and collective responsibilities, as a way to accommodate any gaps in a rapidly developing European battery value chain.

The European battery strategy and objectives could therefore be viewed within the broader framework of EU's sustainable development goals, the European green deal, and the circular economy action plan framework. By emphasizing on strategic autonomy, self-sufficiency and sovereignty in important sectors, such as the battery industry, the European battery strategy can be understood as an offensive long-term strategy to strengthen the European industrial economy, providing jobs and securing critical raw materials, and at the same time align these efforts within a broader sustainable development discourse and collective goals of becoming climate neutral by 2050, which are strongly emphasized within the EU corridors (Directorate-General for Environment, 2023) (Norwegian Ministry of Industry and Fisheries, 2022, p. 7). Norway in similarities with other Nordic countries plays a pivotal role as essential contributors to the "European battery project", as highlighted by The European Battery Alliance (Norwegian Ministry of Industry and Fisheries, 2022, p. 5). This, because of Norway's industrial expertise, leading producer of critical raw materials such as aluminum, nickel, copper, graphite and silicon, renewable power supply, and expertise in "leading markets" such as cars and the maritime sector, well supported by a near 100% renewable power infrastructure (Norwegian Ministry of Industry and Fisheries, 2022, p. 6).

The Norwegian government has seen this as a lucrative opportunity to capitalize on its internal resources, including environmental assets, power supply, and industrial know-how in Norway, and at the same time leverage the industrial economies of scale, investment opportunities, and profitable markets that the European Union offers in the battery sector (Norwegian Ministry of Industry and Fisheries, 2022, p. 5-6). Another important factor that shapes Norway's battery ambitions, regulations and strategy is their membership in EFTA, and through their EEA membership, the government is subject to the European Parliament's battery regulations, strategies and circular economy action plan (Norwegian Ministry of Climate and Environment, 2023). This has both benefits and implications for the Norwegian government. The beneficial aspect of this, is that it makes it easier for the Norwegian government to keep up with current EU regulations that they are obligated to through their EFTA and EEA membership. The concern however, seen from a contextual perspective is that implications may arise when contextual challenges meet broader non-contextual regulations and strategies. However, the EU battery regulations are strategically designed to formulate and implement sustainability standards across the entire battery value chain, from the extraction of raw materials, manufacturing processes, utilization, and end-of-life recycling

conditions. Where the goal is to ensure that all batteries entering the EU single market adhere to set sustainability standards. In legal terms, The Norwegian government's responsibility through the Ministry of Climate and Environment is therefore to align the country's contextual regulations with the EU's as means to capitalize on the EU's single market opportunities (Norwegian Ministry of Climate and Environment, 2023). In practical industrial terms, coordinated by the Norwegian Ministry of Industry and Fisheries, the government's responsibility and strategies as we will outline now, has been emphasizing both regional EU regulatory frameworks for the battery industry, as well as contextual strategies, reflecting utilization of internal resources and know-how.

2.1.3 The Norwegian battery strategy

The Norwegian government's battery strategy is part of the government's "Grønt industriløft" or "Green industry lift" program, which can be understood as the government's efforts to stimulate the development and growth of industries that are considered environmentally friendly or sustainable (Norwegian Ministry of Industry and Fisheries, 2022). This, through policies, investments and initiatives that encourage the establishment and strengthening of businesses that are considered to have minimal negative impact on the environment, reduce waste, focus on renewable energy, and have an aim to have net positive impact on the environment, by national and international sustainability standards. The purpose of the "Green industry lift" program, according to the Norwegian government, is to create new green jobs, increase mainland investments, increase export activities besides oil and gas, and reduce greenhouse gas emissions (Norwegian Ministry of Industry and Fisheries, 2022). The battery industry is one of six pillars in the green industry lift program that the government has set their focus on, with the other pillars being offshore wind, hydrogen, CO2 capture and storage, process industry and forest-based industry. This program, therefore, aims to transition the Norwegian economy away from environmentally damaging activities and industries such as fossil fuels, and towards a model that is more sustainable in the long term, considering the well-being of the environment, the society, and the economy as a whole. The motivation behind this strategy can therefore be understood to be both economically motivated as well as environmental, where the Norwegian governments highlights that the rapidly growing European and global demand for more sustainable batteries for various applications, such as

EV batteries, battery storage systems and more, has been a major motivational factor for their battery strategy interests (Norwegian Ministry of Industry and Fisheries, 2022). This in combination with the idea that the industry will help meet broader sustainable development goals (Norwegian Ministry of Industry and Fisheries, 2022).

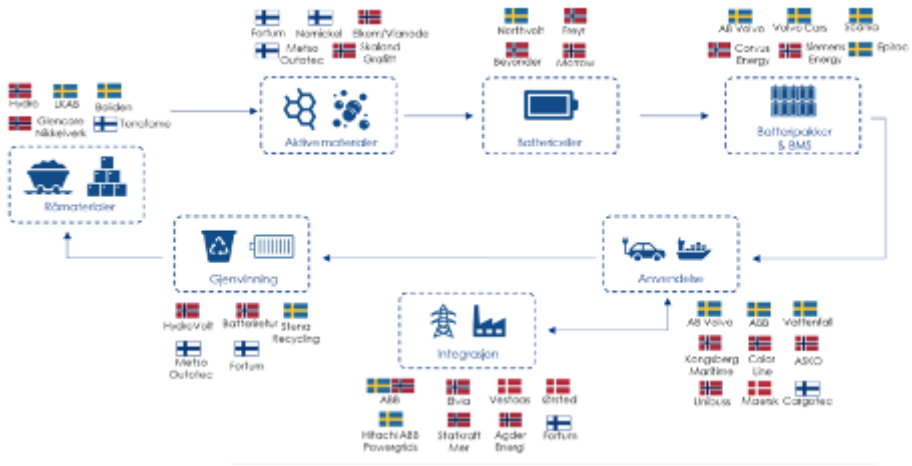
The Norwegian battery strategy designed in 2022, formulates 10 measures which aims to set Norway up for future growth in the battery sector, in alignment with emphasis on the European Battery regulations and circular economy action plan (Norwegian Ministry of Industry and Fisheries, 2022). The purpose of the strategy, one could argue, is to support the government's ambition to utilize internal material, human and know-how resources, with exogenous growth potential that the European and global market offer, with profitable markets, partnerships and set regulations and frameworks that makes it predictable and safer to make investments in the industry (Norwegian Ministry of Industry and Fisheries, 2022). As of 2022, these were the government's ten battery measures (Borkamo, 2022):

1: Leadership in sustainability throughout the battery value chain: The Norwegian government aims to utilize its internal resources, in the form of leading industrial expertise in production of technological solutions, and is currently a key producer of critical raw materials needed to produce lithium batteries, such as aluminum, nickel, copper, graphite and silicon. They also possess leading expertise in "leading markets" such as cars and the maritime sector, well supported by a near 100% renewable power infrastructure. These internal resources make Norway a natural host of sustainable battery production, in all aspects of the battery life cycle, from material sourcing, manufacturing, and recycling. In practical terms, to achieve this ambitious goal, it will involve new strict sustainability regulations, support of sustainability initiatives, and strategic collaboration with industry leaders in this field, as means to promote necessary "green" practices (Norwegian Ministry of Industry and Fisheries, 2021).

2: Promote Norway as an attractive host country for green investments: A strategic way to utilize external expertise and resources, is to attract foreign investments in green technologies, in this regard in the battery sector. This is usually done by promoting investment benefits and incentives to attract foreign investment, where Norway highlights its commitment to sustainability and how they are aligned with broader European battery regulations and frameworks, their skilled workforce, and favorable policies towards green industrial

initiatives (Norwegian Ministry of Industry and Fisheries, 2021). Norway's battery strategy is therefore emphasizing the need for regulations that both promote benefits and investment opportunities for domestic companies, as well as foreign companies that want to invest in the industry by utilizing Norway's internal resources (Norwegian Ministry of Industry and Fisheries, 2022).

3: Enter into industrial partnerships with central countries: The battery strategy emphasizes the need to invest in exogenous strategies as means to forge partnerships with strategic partners to leverage on external resources. The goal, one could argue, is to secure its supply chains, collaborate on research and development initiatives, and enter new markets as means to manage risk, and diversify investment opportunities for domestic initiatives. Norway has through the Nordic Value Chain initiative tried to strategically leverage on its collaboration with Denmark, Sweden, and Finland, as means to strengthen its industrial partnerships with their close neighbors (Norwegian Ministry of Industry and Fisheries, 2021). In April 2021, Innovation Norway, Business Finland, and Business Sweden signed an agreement of intent for Nordic cooperation on trade promotion work, including in the battery area (Swedish Energy Agency and Business Sweden, 2021). The joint venture initiative aims on conducting joint feasibility studies, creating a unified Nordic Value Proposition, as means to attract foreign investments, identifying gaps, and leveraging the complementary competitive advantages of each country within the collaborative battery value chain (Swedish Energy Agency and Business Sweden, 2021). An important aspect about the joint venture initiative is their commitment to align their collaborative framework within the boundaries of EU regulations as means to both capitalize on the growing demand for battery technologies in Europe, and attract foreign investment interests (Norwegian Ministry of Industry and Fisheries, 2021). The proposed collaborative battery value chain aims to include all activities within the lifecycle of the battery, from resource extraction, production and end-of-life management (Norwegian Ministry of Industry and Fisheries, 2021). As illustrated below.



(Figur 2: Overview of important Nordic players in the proposed collaborative battery value chain. Illustration reproduced from The Nordic Battery Value Chain, Business Sweden, in Norwegian Ministry of Industry and Fisheries, 2021, p. 22).

The goal with the Nordic Battery Value Chain is to present a united Nordic front, to enhance their competitiveness in the global battery market, leverage on their already strong industrial ties, identify gaps and allocate resources more effectively in the Nordic region, facilitate concrete investment opportunities, align the regulatory framework and ambitions within the European standards, thus, positioning the Nordic collaborative region as a key player in the sustainable battery sector (Swedish Energy Agency and Business Sweden, 2021).

4: Providing capital, loans and guarantees that trigger private capital: As means to catalyse the sustainable battery industry in Norway, the government emphasize in their battery strategy to stimulate private capital investment by providing capital, loans, and guarantees through a comprehensive approach, initiated by the Process21 expert group assigned by government initiatives in 2020 (Norwegian Ministry of Industry and Fisheries, 2021, p. 55). This measure aims to enhance the competitiveness of the battery industry and related value chains, by attracting new investments, startups, and job creation.

5: Promote access to expertise: Sustainable lithium battery technology as a relatively new field in the green shift paradigm, brings challenges for any government and private company alike, because of the necessity of having sufficient and specialised knowledge and expertise to support and sustain potential growth in this emerging sector. The battery value chain is

complex, and consequently a need for a variety of competencies and skills, ranging from material science, electrochemistry, and process engineering to advanced manufacturing and recycling technologies. The Norwegian government has set the goal of being a leader throughout the whole battery value chain, with an emphasis for an immediate upscaling of a domestic battery value chain to meet their goal of capturing key market positions for their domestic initiatives (Norwegian Ministry of Industry and Fisheries, 2021). This creates a variety of challenges for the Norwegian government to coordinate and manage, in regard to acquiring sufficient specialised expertise in different parts of the value chain. To address this concern, the Norwegian government has actively implemented a multifaceted approach to bolster expertise within its growing battery industry, emphasizing both short-term and long-term challenges. The main objectives, however, is to cultivate expertise of its battery industry, which includes creating educational pathways, fostering collaboration between relevant industries and academic institutions, and enhancing Nordic cooperation as means to forge a competitive environment. As a way to identify and to address their concern regarding competence gaps, the Norwegian government in cooperation with LO and Prosess21 have implemented the BattKOMP1, 2 and 3 initiatives, which focuses on expanding education capacities, focusing on restructuring the educational pathway to stimulate continuous learning, and at the same time integrating international expertise by partnerships among industry leaders and academic institutions (Norwegian Ministry of Industry and Fisheries, 2021).

6 & 7: Facilitating more renewable energy access and contribute to land and other central infrastructure: These measure stresses the need for the government and their partners to facilitate more renewable energy access for domestic and foreign companies, as part of a broader strategy to enhance Norway's attractiveness as a host for future industries, by leveraging on their natural advantages in renewable energy (Norwegian Ministry of Industry and Fisheries, 2021). This emphasis was highlighted by Prosess21 who was tasked by the government to explore opportunities to enhance Norway's competitiveness in attracting new investments, both foreign and domestic, new start-ups, and new green jobs within the process industry and associated value chains (Norwegian Ministry of Industry and Fisheries, 2021, p. 55). Prosess21 argued that from 2050 perspective:

"…It is expected that owners and companies within all Norwegian process industry activities will undergo many strategic cycles where not only local conditions affect whether a facility is

further developed or shut down. Global market trends, technologies, and competitive conditions will influence the assessments made. Authorities and the business community must work together to make Norway an attractive host for the future process industry."
(Norwegian Ministry of Industry and Fisheries, 2021, p. 55).

The Norwegian government are planning to address Prosess21's concerns by implementing a national strategy for the preparation of industrial areas and parks, that are equipped with necessary infrastructure, including guaranteeing the supply of reliable and sustainable energy at a competitive price, among other incentives, as means to promote Norway as a desirable destination to invest in this sector (Norwegian Ministry of Industry and Fisheries, 2021). Additionally, the government sees strategic opportunities with a close cooperation with the EU on tools and framework conditions in areas where Norway has particular advantages and value creation opportunities, such as the value chain for batteries (Norwegian Ministry of Industry and Fisheries, 2021). The goal of these measures, however, is to make Norway an attractive and preferred destination for sustainable industrial development investment and establishment, for both domestic and foreign companies.

8: Ensure predictable, efficient, and coordinated public processes: The Norwegian government is committed to ensure predictable, efficient and coordinated public processes for the battery industry, as a way to streamlining public and private interaction and cooperation, by focusing on facilitating conditions for the realization of green and socio-economically profitable industrial projects in the country (Norwegian Ministry of Climate and Environment, 2023). The government has therefore emphasized the need to provide provision of land, infrastructure, and necessary licenses and permits, in order for larger industrial enterprises to establish themselves. As complex industrial activities require necessary frameworks to operate properly. In practical manner, this involves streamlined processes and permit distribution in alignment with contextual needs and with state agencies, county municipalities and municipal bodies, to reduce uncertainties for private industry players, regarding project timelines and feasibility. This, because the different state agencies have different responsibilities and authorization by law, and therefore need permits and room for action that are both contextual and localization specific, and at the same time aligned with broader state regulations when needed (Norwegian Ministry of Climate and Environment, 2023). Henceforth, to balance the government's ambitions for rapid industrial development, with

broader collective sustainable growth objectives, the government has emphasized the need for thorough environmental assessments and community involvement, as different initiatives bring with them both benefits and challenges for the civic society and environment. In practical sense, this includes facilitating impact assessments, and involving local communities and stakeholders in the planning and concession processes to ensure a democratic and responsible decision-making in alignment with the framework of the Norwegian Planning and Building act. This, however, must be balanced with the respective character of each project, as all projects and initiatives are unique and context sensitive (Norwegian Ministry of Climate and Environment, 2023). The government is also seeking to help the domestic industry to leverage on international expertise to meet the domestic shortages of experts in the different fields in the battery industry. This, the government argues, may require navigating residency permits and other regulatory requirements efficiently, to help companies that want to quickly realize the industrial projects, and take care of their specific needs in that connection, in competition with international actors (Norwegian Ministry of Climate and Environment, 2023, p. 67). The goal however, for the Norwegian government, by implementing these strategies, is that they aim to create a supportive environment for the battery industry to thrive, that balances the urgency of industrial development with broader principles of environmental sustainability, and community involvement (Norwegian Ministry of Climate and Environment, 2023).

9: Leadership on tomorrow's battery solutions and utilization of digital technology opportunities: The government has set this ambitious goal, based on their orientation of the internal resources Norway has, as mentioned earlier. This, among other factors, has given the government enough reasons to believe that this goal is achievable. By fostering research and development, improving industry-academia collaboration, and embracing digital manufacturing technologies, the Norwegian government aims to make their ambitious goals a reality. This, in a practical manner, has meant that the government is working to create innovative and sustainable battery technology by utilizing its vast renewable energy resources, industry complex, and its broad R&D environment. Also, building supportive knowledge ecosystems, encouraging national and international cooperation, especially by aligning with projects like the European Battery Alliance, and establishing a financial and legal structure that encourages investment and innovation are all part of the approach. By taking these actions, Norway hopes to lead the way in digitalization and battery technology

developments, establishing itself as a competitive and sustainable leader in the international market (Norwegian Ministry of Climate and Environment, 2023).

10: Support for growing pilot municipalities: Battery industry development establishments bring complex challenges for any county or municipality they choose to establish themselves in. They are complex as they have diverse effects and influence in the socio-economic dimension of society, as well as the environment. Menon Economics was assigned by the government to carry out a social analysis for the establishment of both Freyr in Mo i Rana and Morrow Batteries in Arendal, where the findings illuminated several areas that will be essential for the success of the respective establishments. The success factor for the establishments mentioned, the report argued, will be influenced by recruitment, housing and community planning, education, competence and R&D, land, infrastructure and transport and the power system (Norwegian Ministry of Climate and Environment, 2023). The analysis also stressed that for the respective municipality to provide with all the necessary resources needed for a successful establishment, that they will need a greater streamlined coordination and better joint efforts across relevant sectors and administrative levels (Norwegian Ministry of Climate and Environment, 2023, p. 69). Because of these composed synergies of interaction, the government is committed to support "pilot municipalities" that host large establishments in the battery value chain. They want to do this by inviting further dialogue with involved municipalities and facilitate an exchange of experience between host municipalities in Norway, and their Nordic partners. Together with both Business Finland, and Business Sweden, the Norwegian is trying to establish closer joint venture initiatives, to foster shared knowledge and experience distribution for Norwegian host municipalities in the battery value chain (Norwegian Ministry of Climate and Environment, 2023, p. 69).

2.2 Arendal municipality

Not surprisingly, as aforementioned, did Arendal municipality take part to be one of the municipality pioneers in Norway to host the establishment of a battery value chain, as they on May 27th, 2021, agreed to host the establishment of Morrow Batteries in Arendal (Morrow Batteries, 2021). The municipality emerged as an ideal location for Morrow Batteries to establish its Gigafactory due to a combination of strategic geographical positioning and the

presence of essential infrastructure needed for an operational and competitive battery value chain. The designated area of Eyde Energy Park was chosen for its strategic location that fulfils essential requirements for large-scale battery cell manufacturing, because of its operational setup, including essential requirements such as renewable power availability, ideal infrastructure, and water access for cooling. Another decisive criterion was the ideal strategic location Eyde Energy Park has, as it is located by the highway, with short connections to local airports, harbours, and short distance to prominent established suppliers of raw materials and expertise. This offered Morrow Batteries a solid foundation to target the European market more effectively from Arendal municipality, as argued by Morrow Batteries (Morrow Batteries, 2021). The battery initiatives' interests in establishing themselves in Arendal, can therefore be understood to be a combination of strategic location, sustainability considerations, and the region's industrial infrastructure, offered by the municipality. However, it can also be described as a political one, as the municipality viewed the battery initiative as a great opportunity to pursue their goal of becoming the most climate-friendly municipality of its size in Norway, through sustainable industry initiatives (Arendal Municipality, 2020, p. 30). The initiative is viewed as one of the most important events in modern history of Arendal municipality, marked as a significant step towards what has later been termed as "the battery coast" in Southern Norway.

2.3 Morrow Batteries

Modern discourse in sustainable development, in alignment with broader regional sustainability goals, as we have briefly outlined, has in the European context emphasized a transition towards electrification and renewable energy sources, as a strategy to address challenges urban growth and climate change pose, both at local and regional levels. This evolving narrative has highlighted a growing demand for more efficient and sustainable energy solutions, particularly lithium batteries (LIBs), which have emerged as the preferred energy source within the transportation and energy storage sector in Europe, in the green transition context. High energy density, minimal self-discharge rates, rapid charging capabilities, and extended longevity, has positioned this technology as a critical part in the shift towards sustainable mobility (Lai et al., 2022, p. 1). In light of this technological demand and growing market, many private initiatives have established themselves to fill the gap and

take part in this green industrial rush. One of them, Morrow Batteries, which is our case in this research, was established as a result of this growing demand for sustainable battery cells for the transportation and energy storage sector.

(Figur 3: Bravida skal levere industrirør til Morrows nye fabrikk, Frank Johannesen, in Agderposten, 2023)

The company, established in 2020, has in their business model, ambitions to develop and manufacture the world's most cost-effective and sustainable lithium battery cells (Morrow Batteries, 2021). Morrow made it their goal and vision to meet the growing sustainable energy demand, as the company aims, in the first phase, to advance lithium battery technology further, focusing initially on Lithium Iron Phosphate (LFP) and Nickel Manganese Cobalt (NMC) technologies. Furthermore, the company has in their plans to develop lithium batteries with emphasis on lithium nickel manganese oxide (LNMO) technology for their next-generation batteries (Morrow Batteries, 2024). This strategic move has been emphasized, according to the company, for eliminating the need for cobalt and reducing the amounts of nickel and lithium, relying instead on the abundant element manganese, which consequently offers a promising path toward cost reduction and sustainability (Morrow Batteries, 2024). Their competitive advantage, however, lies not only in the innovative battery technology but also in the strategic location of their gigafactory in Eyde Energipark, Arendal. The strategic location provides the company with access to the region's abundant, cheap and near 100%

renewable hydropower energy source, which provides a cost-effective and sustainable energy source essential for large-scale sustainable battery production. Further, the south-coast region provides a skilled research environment, and proximity to the European markets. Furthermore, the strong collaboration between Morrow Batteries, governmental bodies, and academic institutions, like the University of Agder, creates a comprehensive ecosystem for battery innovation in the region, later dubbed the "Battery Coast".

The case was chosen because of its relevance as an initiative that represents a concrete and significant example of a political investment in a green industrial initiative in the green transition context. Furthermore, the case provides a unique opportunity to explore the interaction between local decision-makers and private business actors in the context of sustainable development. The case also provides an arena for analyzing discourses around sustainable development and green technology, and how these discourses manifest and influence political decisions, practices, ideas and expectations for various business ventures. Furthermore, the case gives our thesis room to discuss the different causes and reasons why some technological initiatives are emphasized by government authorities and private stakeholders, in the context of sustainable development discourse, and also how we can understand resistance and support by the civic society to these initiatives in relation with socio-technical imaginaries, in regard to broader sustainable development narratives.

Morrow Batteries have attracted polarizing opinions in Arendal municipality and the region, both by politicians as well as the civic society, as some are positive to the initiative and others are the opposite.

2.4 Conflicts in the Green Transition

The contestation of ideas and perspectives regarding the green transition is not only academic in nature, as this thesis will elaborate, but has real-word implications for policymakers, development strategy, and community relations. The transition towards an industrial green shift, often characterized by an increased emphasis on sustainability and environmental consciousness, in the context of investments in green industry initiatives such as Morrow

Batteries, brings with it complex challenges for the local government as well as affected stakeholders in the local community and the region. This, as different stakeholders in the local community have differing understanding and opinions towards an initiative of such complex scale.

In our example with Arendal municipality, the municipality agreed in January 2021, into a formal partnership with Morrow Batteries, granting the initiative access to 940 acres of land, for the construction of a 42GWh battery cell factory (Morrow Batteries, 2021). The partnership was unanimously approved by the municipality's City Council, emphasizing the municipality's commitment to fostering sustainable business development in the area. However, one of the strategies emphasized by the municipality and the Norwegian government, as means to support a competitive and sustainable battery value chain in Arendal, was a cluster approach, where the battery value chain would be supported by local and foreign subcontractors and suppliers in the region. It was later, therefore, argued by Arendal municipality in favor to allocate additional land area, as the municipality was planning for an extra 2,500 acres, in addition to the 940 acres already dedicated to Morrow Batteries, to accommodate the needs of relevant subcontractors and suppliers, both local and foreign. The objective was to create a cluster of suppliers and subcontractors around the initiative, concentrated in a short distance to the battery cell factory, the purpose being to support the whole battery value chains, with the necessary resources (Norwegian Ministry of Industry and Fisheries, 2021). This strategy, to allocate more spatial area around Eyde Energy Park and surrounding areas, was according to the Government's battery strategy report, part of a broader strategy to attract foreign workers, expertise, and companies, to establish themselves in the area, as means to create a competitive and robust cluster environment, which would make up the battery value chain in Southern Norway (Norwegian Ministry of Industry and Fisheries, 2021). Morrow Batteries serves, in this example, as a concrete example of implementing green technologies and the socio-economic transformations required to realize sustainable development at a local level. The overall initiative can be seen to highlight a collaborative effort between the municipality and the private sector, with a strategy that aims to leverage external resources for local and regional development, consistent with broader exogenous development strategies emphasized by the government and private interests (Pike et al., 2017).

In this example the municipality had, because of the Morrow Batteries investment, to devote a

lot of resources, in the form of financial funds, land area allocation and infrastructure, and plan regulation for this project to be achievable. This, without any form of guarantee that the project will succeed and contribute to a greener transition and social and economic development in the municipality. This, one could argue, naturally caused divided opinions towards the initiative in the local community. These challenges, as we will discuss further, can also be understood in relation to benefits and challenges perceived by all stakeholders in the local community, which consequently affects resistance or support for the battery initiative in the municipality.

Chapter 3.0 Theoretical framework

This research takes into consideration three theoretical perspectives that will be illuminated further, that collectively form the foundation of this study. The three theories include: discourse theory, socio-technical imaginaries, and exogenous development strategies. The choice of theories is based on the interconnectedness of these theories within the framework of this research, which focuses on understanding the complex challenges with exogenous growth strategies in the green transition, emphasizing the political investment and adoption of Morrow Batteries in Arendal and how this affects the municipality. The theory of discourse analysis serves as a foundational tool for understanding the green transition, and how discourses on sustainability and green technology are conceptualized and communicated within broader institutional arenas and local societies. Additionally, socio-technical imaginaries help us to narrow our focus to local experiences and perspectives on technology initiatives, and how such initiatives may contribute to their localities. This perspective becomes useful when discussing the establishment of Morrow Batteries in Arendal, as it illuminates how collective visions and expectations of technological initiatives in local community's shape and influence political and private commitment. This, in regard to which technological innovations that are pursued and invested in, but also how these visions and expectations interact with broader narratives on sustainable development. The latter provides the necessary lens we need to examine the impact of external social and economic factors and trends, and how they shape and influence local development, as well as what challenges this may bring to policy makers, private actors, and civic society, particularly Arendal. By

discussing the adaptation of Morrow Batteries in relation to global sustainability goals and market demands, the theory about exogenous development strategies help us to understand our argument, that some political commitments, such as Arendal municipality's commitment to the establishment and investment in Morrow Batteries, does not happen in a vacuum, but can be understood to be influenced by global economic narratives and dynamics.

3.1 Literature review

After reviewing many theories and literature related to the topic of our research question: "How do Arendal municipality policies and commitment toward the Morrow Batteries initiative in Arendal reflect EU's discourse about the green transition, and how do these discourses about the green transition affect local sociotechnical imaginaries and exogeneous development strategies in Arendal?" After considering several theories and literature, to help us research our question we landed on 3 theories; discourse analysis and theory, emphasized by Jørgensen & Philips, Sociotechnical imaginaries, emphasized by Jasanoff & Kim and Exogenous development strategy, emphasized by Pike et al. Discourse analysis, as emphasized by Jørgensen & Phillips, we argue, is valuable for understanding the role of language and discourse in shaping social reality. This theory allows us to examine how the EU's discourse on the green transition influences local policies in Arendal. The concept of sociotechnical imaginaries, as developed by Jasanoff & Kim, is relevant as well, as it provides a framework for exploring how collective visions of the future influence technological development and societal change. This theory is particularly relevant in examining the Morrow Batteries initiative, as it highlights the interplay between discourses and technological innovation. Pike et al 's theory of exogenous development strategy will also be of great importance for this thesis, as it helps us to analyze how Arendal municipality's implementation of Morrow Batteries, and their strategy to attract external resources to achieve its development goals affect the local community in Arendal.

3.2 Discourse analysis in the green transition

Discourse as a term, according to Jørgensen & Philips (2002), is commonly defined as the idea that language is structured according to different patterns that people's utterances follow when they take part in various domains of social life, with well-known examples being political discourse, green transition discourse, and sustainable development discourse (Jørgensen & Phillips, 2002, p. 1). As discourse analysis as a field, can be understood to be concerned with analyzing these patterns, where the goal is to understand how these patterns of language use shape and reflect social realities and identities (Jørgensen & Philips, 2002, p. 1). Understood as a methodological approach, it seeks to uncover the underlying rules and conventions that govern how language is used to construct meaning and understanding in various social settings (Jørgensen & Philips, 2002, p. 1). Therefore, in its core is the study of discourses, termed as discourse analysis, concerned with language and the subject (Jørgensen & Phillips, 2002, p. 8). The approach emphasizes the foundational claim of both structuralist and post-structuralist linguistic philosophy, that argues that our access to reality is always through language and discourse, with the orientation that our use of language doesn't just reflect the world around us as it is, we also actively contribute to shape and construct our reality with language (Jørgensen & Phillips, 2002, p. 9). Jørgensen & Philips argues further that this does not mean that reality doesn't exist, emphasizing that while meanings and representations are indeed real, physical objects exist too. However, their meanings are shaped and defined through discourse (Jørgensen & Phillips, 2002, p. 9).

A key aspect of the green transition, is that it is a discursive process, in the sense that it involves discussions and debates about how the green transition should be emphasized, understood and defined. In this regard, an explanation of discourse becomes valuable, to highlight how an idea about the green transition can manifest itself and influence societal, economic, and political action and commitment. Furthermore, drawing on the established concern of the impact language has within the social sciences, termed as the 'linguistic turn' by Edelman (1988) in Rydin (1999), we ought to stress the understanding of language as not merely descriptive, but as a potent tool that constructs reality and mediates human perception (Rydin, 1999, p. 468). This take suggests a critical view of language as not only a tool for communication, but also a powerful tool that can shape how we perceive ideas, concepts, and

reality, causing a ripple effect on our understanding of these. Additionally, Rydin acknowledges that language can be wielded by actors to influence how information is interpreted, a view emphasized by Fischer and Forester (1993), who argue that policymaking is inherently communicative, constituting a constant discursive struggle among stakeholders (Rydin, 1999, p. 468). To add on this, Fairclough (2013), argues that discourse shapes and reflects power relations, and knowledge systems, influencing how concepts such as the green transition is conceptualized, implemented, and contested in policy and practice (p. 10).

Jørgensen & Phillips notes that powerful groups can control discourse by setting the agenda and framing discussions in ways that benefit their values and interests (Jørgensen & Phillips, 2002, p. 63). An example to illustrate these points can be found in the discourse of sustainable development, where the language or terms that is used to define and explain the discourse, usually highlights terms like 'renewable energy', 'carbon footprints' and 'green technology", reflecting the values and interest of entities such as the EU (Di Felice et al., 2021). This use of language, consequently, influences social, political and economic perception, expectations, and attitudes toward the discourse, thus producing certain values, norms and expectations (Jørgensen & Phillips, 2002). Drawing on Jørgensen & Phillips arguments, we may argue that while the physical reality of environmental challenges does undeniably exist, its interpretation and meaning, however, are essentially influenced and shaped through discourse (Jørgensen & Phillips, 2002, p. 9).

The green transition can thus be understood as a discursive process, in the sense that discourse itself evolves over time, because language is used in different ways over time, which changes the meanings of words and concepts (Jørgensen & Phillips, 2002). This view draw on Jørgensen & Phillips's understanding of discourses as being dynamic, because the meanings of words and concepts evolve over time as language is used in various social contexts, as language is employed differently by different groups and in different situations, it reshapes and redefines the discourse (Jørgensen & Phillips, 2002, p. 9). This evolution, however, that is, the changing social norms, values, and power relations, demonstrates, one may argue, how language is a dynamic, adaptive tool that influences and is influenced by societal changes. One could therefore argue, as Jørgensen & Phillips's notes, that "*changes in discourse are a means by which the social world is changed*" (Jørgensen & Phillips, 2002, p. 9).

3.3 Sociotechnical imaginaries

Planning, especially in the context of the green transition, involves activities with various stakeholders, contested discourses and interests, power dynamics, and civil society (Jensen, Andersen, Hansen & Nielsen, 2007, p. 12). In relation to the political nature of sustainable development, focusing on Arendal municipality and their collaboration with Morrow Batteries to establish a battery factory at Eyde Park, and the competing interests, values, and visions for the future reflected in the local community, the project highlights the multifaceted nature of the green transition, from a local planning perspective. As this technology project, while aiming to contribute to a collective commitment to sustainability goals, economic growth, and social equity in Arendal, is at the same time inherently political, leading to contested interests and conflict. Bridge et al. (2013), emphasizes this concern, arguing that adopting new technology initiatives, transforming landscapes, and affecting places and communities that were previously unaffected, often leads to conflict, manifesting itself in local debates over land use, environmental impacts, and the social implications of adoption (Bridge et al., 2013, p. 335). This interaction, however, provides an opportunity to explore the underlying notions of the green transition, and how a technological initiative like Morrow Batteries is perceived, contested and supported, from a local perspective. By analyzing the interplay between discourse and societal perception, expectation and visions of the future, we will elaborate on how underlying power dynamics shapes and influence technological development, focusing on Arendal municipality.

The concept of sociotechnical imaginaries becomes relevant in this regard, as the theory illuminates how collective visions and expectations to technological initiatives, and their understanding of climate challenges and how to solve these, shape and influence political and societal commitment. But also, how these collective visions and expectations of technological initiatives are influenced by discourse and power dynamics. In this thesis, we have chosen to emphasize the definition by Jasanoff & Kim (2015) who argue that the concept of socio-technical imaginaries can be defined as:

" Collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared under- standings of forms of social life and social order attainable through, and supportive of, advances in science and technology (Jasanoff & Kim, 2015, p. 4).

Drawing on this definition, sociotechnical imaginaries as a theory, concerns about the collective experience of technology and how it may contribute to society and their lives, and not the individual experience. As emphasized by Echevarria et al. (2022), arguing that explorations of sociotechnical imaginaries emphasize the significance of the underlying forms of social imagination within groups or cultures that tie ideas about technological progress to shared understandings of what it means to live a good life (Echevarria et al., 2022, p. 257). Furthermore, Echevarria et al. argues, that by analyzing sociotechnical imaginaries, we can explore the way communities or cultures tells stories about or draw connections between the development of technology, either as a general concept or in the form of specific technologies, such as lithium batteries, and the potentiality these technologies have to improve their lives and livelihoods (Echevarria et al., 2022, p. 258). In practical manner, the theory helps us explain, for example, why people in Arendal may be willing to pay for new technologies, like lithium batteries and battery energy storage systems, though not only in purchasing means, but also through other pathways, such as higher energy prices, increased taxes to finance public investments like Morrow Batteries, a willingness to tolerate the visual impact of large-scale projects on valued landscapes, and also being open to behavioral changes that they have to adapt to because of their energy landscapes being changed (Echevarria et al., 2022). Meadowcroft (2009), stresses the concern that the political aspect of transition management, which is crucial for sustainable development, inherently involves political choices, especially when it comes to allocating public resources and adjusting regulatory frameworks to support change, as he emphasizes the deep influence of political agendas and power dynamics on sustainable development decisions (Meadowcroft, 2009, p. 324-325).

3.3.1 Power

A valuable lens the approach of sociotechnical imaginaries provides in understanding what influences social willingness, is that it is anchored in the perceived value people imagine technology will contribute to improving their lives. However, it is also concerned with the degree to which such ways of imagining the world are collectively held and institutionalized within a given society (Echevarria et al., 2022, p. 257). The latter emphasizes the concern about the ability sociotechnical imaginaries have to shape and influence the values, norms, narratives and visions different cultures attach to different technologies, consequently leading to divergent patterns of technology innovation, based on society, country and region. This concern draws on the work by Hudlet-Vazquez et al. (2023), who argues that power and discourse is at the heart of all imaginaries, emphasizing the idea that sociotechnical imaginaries tend to theorize power as hierarchical and institutionally located, rather than relational and distributed (Hudlet-Vazquez et al., 2023, p. 32). The core assumption the authors emphasize here, relevant for our thesis, is that energy systems are always political and as such are produced by and influence societal, cultural and economic forms of organization (Hudlet-Vazquez et al., 2023, p. 32).

The assumption above helps us discuss energy systems, including renewable energy initiatives like Morrow Batteries, as essentially political. This means to view the initiative as not just a manufacturer of technical solutions, like lithium batteries, but to also analyze it within the social, cultural, and economic context and discourse that supports it. Furthermore, the assertion that power is at the heart of all imaginaries, however, highlights the intertwining link between sociotechnical imaginaries and power dynamics (Hudlet-Vazquez et al., 2023). Though traditional view of power, emphasized through sociotechnical imaginaries theories as hierarchical and institutionally located, as noted by Hudlet-Vazquez et al. (2023), the authors further stresses the emphasis on understanding the relationship between imaginaries and power within the conceptions of power as being productive and circulating (Hudlet-Vazquez et al., 2023, p. 32). This emphasis, however, draw on Foucault’s view of power as relational, productive, and circulating throughout society, arguing that power is something that nobody possess, nor has it a specific location, but can be understood as an ongoing process where groups are always challenging the hegemony of the dominant ones, stressing the concern that

domination and resistance is an essential expressions of power, and therefore the notion “there is resistance in domination and domination in resistance” (Hudlet-Vazquez et al., 2023, p. 32).

Foucault's perspective on power is valuable in understanding sociotechnical imaginaries in the context of the green transition, how this is a relational process, and how this can be analyzed at a municipality level, as it underscores how power operates through everyday social interaction, discourses, and communication, rather than only being concentrated in specific institutions. This means examining how power influences the discourse around the Morrow Batteries initiative. Focusing on who controls the narrative surrounding Morrow Batteries and the green transition in Arendal? Whose interests are prioritized? Who gets to participate in the decision-making? By understanding the power structures at play, we can better understand how the vision of a green transition is constructed and contested. It becomes, therefore, necessary to examine the underlying structures that shape the communication, language, and discourse that surround the sociotechnical imaginaries.

Furthermore, Foucault's power/knowledge is valuable in this discussion, as it sympathizes how structures in society (norms, values, knowledge) are influenced and shaped by underlying power relations in society. In his explanation of the term, Foucault sympathizes with the connection between underlying power dynamics and knowledge production, where he argues; *"... power is something that permeates society and is often exercised unconsciously. Power is anonymous, emphasizing structuralism's theory of power of anonymous structures over the human mind."* (Foucault, 1994, in Snævarr, 2017, p. 250). An important aspect of Foucault's approach to structures, relevant in how sociotechnical imaginaries are influenced by power, is his argument that considers structures in society (knowledge, norms and opinion formation) as not objective truths that are subject to stable and neutral systems, rather, he suggests that the formation of societal knowledge is inherently linked to power dynamics, stressing the concern that those who control the dominant narratives within a society wield significant influence over what is considered true or false, acceptable or unacceptable (Foucault, 1969, p. 68) (Snævarr, 2017, p. 250). Further, Foucault suggests that the control over discourses, including what is considered true or false, is confined to a specific group, which influences decisions, institutions, or practices through the ownership of discourse, thereby shaping societal norms and what is deemed acceptable or

unacceptable (Foucault, 1969, p. 68). Groups, which here can be understood as political and economic institutions and actors, are able to control a discourse, Laclau and Mouffe in Jørgensen & Phillips (2020) argues, by setting the conversational agenda, which means that they influence what topics are discussed, how they are discussed, and who gets to participate in the discussion (Jørgensen & Phillips, 2020, p. 63). This control, argues Laclau & Mouffe, helps them shape social identities and relations according to their interests (Jørgensen & Phillips, 2020, p. 63). This form of power or control is emphasized by Van Dijk (2000), who defines it as social power, which can be understood as; *"... the control exercised by one group or organization (or its' members) over the actions and/or the minds of (the members of) another group, thus limiting the freedom of action of the others, or influencing their knowledge, attitudes or ideologies"* (Van Dijk, 2000, p. 84).

The main emphasis which is highlighted here, is Foucault's (1969) argument suggesting that language is a tool through which power is exercised in society, as language becomes a medium of power, capable of shaping norms and opinions by controlling the discourse, through communication, where Van Dijk add on this as he emphasize that power is based on privileged access to valued social resources, such as wealth, status, job, or a preferential access to public discourse and communication (Van Dijk, 2000, p. 85). As illuminated by Bruner (1991) in Di Felice et al. (2021), narratives help in making sense of complex realities by structuring experiences into coherent stories, emphasizing the notion that "*policies do not only identify problems, but policies also contribute to shaping them*" (Di Felice et al., 2021, p. 3). Di Felice et al. argues, that this two-way relationship can be understood in the context of sociotechnical imaginaries and national policy plans, as policy makers, influenced by EU sustainability policies, construct a reality where sustainability issues are no longer political, but technical ones, stressing the concern that when issues are framed this way, technical and technological solutions become the "natural" pathway to be taken, thereby further strengthening and locking-in the techno-optimist imaginary, operating as a dominant imaginary which influence policy making, private actors and local residents (Di Felice et al. 2021, p. 3).

Through his critical communication theory in the analysis of social and political structures, Habermas recognized that power structures can be interpreted as communication structures, where he sympathized with Foucault's perspective on power as a relational phenomenon, by

arguing that power structures and agents not only convey information, but also communicate political and moral meanings, seeking support, consensus, and trust in society (Forester, 1980, p. 276). The core of this theory, however, lies in the analysis of distorted communication, which emphasize the ability of various actors in society have to produce information, often misrepresented and misleading, with the intention of influencing and controlling people's perception of a phenomenon and therefore also their understanding, perception, and support (Forester, 1980, p. 277). The power wielders' ability to produce, but also to withhold information contributes, according to Habermas, to preventing a transparent and inclusive decision-making process, by allowing these structures to systematically exclude certain groups, often based on culturally constructed identities, from decision-making processes (Forester, 1980, p. 277).

3.3.2 The Public Sphere

A relevant perspective for understanding how sociotechnical imaginaries is contested and debated in local communities, in a modern context, involves illuminating on how technological advancements, particularly the internet and social media, have revolutionized interaction, connectivity, and power dynamics. The advancement of these interaction-technologies has led to the formation and establishment of institutions, economic processes, practices, integrations, as well as new forms of societal organization and structuring (Castells, 2000, p. 81).

Based on the understanding of power as a relational phenomenon exercised through interactions between stakeholders, Castells' (2000) concept of the public sphere is highly relevant. The public sphere is defined as a network for communicating information and viewpoints between the state and civil society (Habermas, 1996, in Castells, 2008, p. 78). This dynamic space includes the channels, arenas, and meeting rooms that the public uses to present their ideas, concerns, and projects to political decision-makers. One may argue that discourses and imaginaries in the context of the green transition, from a local perspective, are highly contested and debated within this space. Castells argues further that this space functions as both a source where politicians gather current agendas, concerns, and ideas from the public, and a channel where social values, interests, and priorities are debated (Castells, 2008, p. 78-79). In practice, politicians collect the public's input through various public

spheres, such as newspapers, the internet, social media, and public meetings, and use this information to produce laws and regulations that reflect societal changes and concerns (Castells, 2008, p. 78-79). The public sphere plays a critical role in planning and for local policymakers, as it is here where the residents' concerns, opinions, and ideas are formed, making it essential for socio-political organizing.

From a power perspective, however, the public sphere functions as a space to challenge power relations and dominant discourses, through social movements, interest groups, and grassroots organizations. As the space is frequently utilized to rally support, establish agendas, and challenge prevailing dominant discourses and power structures (Castells, 2008, p. 79). In a modern globalized society, the power dynamics in the public sphere are complex; information spreads quickly, influencing public opinion, especially via social media. This can overshadow local needs and opinions, creating challenges for local policymakers who must balance local priorities, visions, and imaginaries with broader dominant discourses and imaginaries.

Understanding how sociotechnical imaginaries are contested and debated in local communities, involves as discussed, to recognize the cultural space of the public sphere, where power dynamics influence which discourses are formed and reproduced. According to Castells (2000), this space can lead to a biased distribution of power and representation, where knowledge of these spaces and the ability to mobilize broad support and consensus significantly impact the debate (Castells, 2000, p. 80). This notion, tries to highlight the concern that this can lead to marginalization of certain groups and perspectives in the public sphere (Castells, 2000, p. 80 and 90). The theory tries to sympathize with the concern that planners and policymakers must recognize these power relations and work actively to ensure the inclusion of underrepresented groups. Dotson (2011), emphasizes this concern through her work "Tracking Epistemic Violence, Tracking Practices of Silencing", arguing that acknowledging structural power relations allows for societal norms to be changed, inclusive spaces to be created, and the voices of the silenced to be amplified (Dotson, 2011, p. 236-237). These theoretical perspectives are therefore, one may argue, essentially valuable for understanding how sociotechnical imaginaries are shaped, contested, and debated in local communities, in a modern context through the public sphere.

3.3.3 Agonistic planning

Agonistic planning is inspired by ancient Greece and the public sphere, where the public agora was a meeting place for public expression of opinion, discourse and debate, at a time when democracy was only reserved for people who met specific criteria. The principles in the agora were freedom of speech, free debate and an agonistic respect that required openness and a civil dialogue (Pløger, 2017, p. 266). This perspective on debate as a driving force for democratic development is what created the fertile ground for Chantal Mouffe's agonistic planning, a planning theory that has gained a stronger foothold in public and private planning in recent times. Agonism is in opposition to Habermas' ideal of common consensus, and according to Mouffe, conflict and debate must be seen as a legitimation of our functioning democracy, and thus as a driving force for democratic development (Mouffe, 2013, in Kühn, 2021, p. 145). She emphasizes the importance of an agonistic approach as a rational consensus will not be realistic since it always reflects hegemony, which in turn is based on exclusion (Vik & Refstie, 2014, p. 282). An agonistic approach to planning will, instead of seeking agreement and consensus, rather try to recognize different power structures, interests and disagreements, and consider conflict as a means of "*becoming more open to the diversity of voices and the complex power structures that make up society around us*" (Vik & Refstie, 2014, p. 282), as it reflects our democratic society in a more accurate way.

3.4 Exogenous development strategies

Local and regional planning and development as a field emphasize different strategies and tools policymakers and institutions have at their disposal to develop their respective spatial responsibilities, as private actors and their ambitions to pursue growth. Some of these strategies, as emphasized by Pike et al. (2017), are indigenous and exogenous development strategies (Pike et al., 2017, p. 229). Indigenous development strategies focus on leveraging and investing in internal resources, such as human capital, raw materials available in the locality, industrial know-how/ expertise, and technology (Pike et al., 2017, p. 205). By building on the already established resources, inherent in the region or localities, this approach emphasizes the use and development of local advantages and strengths, such as

existing industries, natural resources, human capital, and cultural assets, as means to drive economic growth and development in a specific region or locality (Pike et al., 2017, p. 205-206). In practical manner, policymakers that emphasize this approach, develops policies and allocates resources to support the growth of locally owned and operated businesses, they also invest in the education and training programs to improve the skill levels of the local workforce, they invest in infrastructure and projects that supports local industries and community development, and they promote and leverage on the unique cultural and economic and social values available in the locality, to attract tourism and investment (Pike et al., 2017).

Exogenous development strategy, on the other hand, involves the emphasis on attracting external resources, investment, expertise and technology to a locality, or a region (Pike et al. 2017, p. 229). This approach as emphasized by Pike et al. is particularly relevant for localities or regions that lack abundant internal/ indigenous resources to achieve their development goals, as the approach can also be understood as a government's ability to attract and utilize external resources to enable economic growth in their local and regional economies. Also, the approach emphasizes private economic entities such as Morrow Batteries who has an internationally oriented model, and how they can utilize external resources to acquire technological and economic resources, being human capital, material resources, research collaboration, or access to new markets (Pike et al., 2017). Moreover, the strategy also involves building strategic relationships between local firms and external partners, suppliers, and clients, fostering both cooperation and competition to enhance regional development (Pike et al., 2017, p. 229).

An important aspect to address, about the two approaches highlighted above, however, is that even though exogenous development strategies are, to some extent, distinct from indigenous strategies, they are, in a broader sense, all connected when trying to understand the synergies that make up local and regional development. As local development, policymaking and economic development has never been more interconnected to the global political and economic structures, as emphasized earlier. This is evident in how local policymakers in Arendal have tried together with their partnership with Morrow Batteries, and the Norwegian government, to adopt both a long-term strategy to develop the Norwegian battery industry, but also seen the need for a short-term strategy to catalyze Norwegian battery investments, but also to meet challenges with developing a complex battery value chain in a rapidly developing

industry (Norwegian Ministry of Industry and Fisheries, 2021). Where each strategy emphasizes each of the approaches, let us illustrate.

The Norwegian government through the Norwegian battery strategy, formulated measures which aimed to set Norway up for future growth in the battery industry, as the purpose of the strategy, was argued to support the government's ambition to utilize indigenous resources, such as local raw material industries, human capital and industrial expertise and know-how, infrastructure, renewable energy sources, as a comparative advantage when seeking exogenous growth opportunities presented and offered by the European market, with profitable markets, partnerships and set regulations and frameworks that makes it predictable and safer to make investments in the industry (Norwegian Ministry of Industry and Fisheries, 2022). However, as emphasized by the EU's battery strategy, developing and manufacturing complex lithium battery technology is a relatively new investment area in Europe, compared to other sustainable energy technologies, such as wind power and solar energy (Norwegian Ministry of Industry and Fisheries, 2021).

Even though Norway has important substantial internal resources, such as extensive expertise in important technological industries across various sectors (including automotive and maritime), leading suppliers of critical raw materials like aluminum, nickel, and graphite, and abundant renewable energy sources, which position Norway uniquely to lead sustainable practices throughout the battery value chain, they also share the same challenges and limitation as any government and private entity alike that wants to develop a battery value chain, namely expertise and a skilled workforce. As the nature of battery production, especially for advanced lithium and other advanced technologies, requires specialized knowledge and expertise that isn't readily abundant nor available in Norway, the reason, as concerned in the Norwegian Battery strategy report, is because of the growing demand of having sufficient and specialized knowledge and expertise to support and sustain potential growth in this emerging sector (Norwegian Ministry of Industry and Fisheries, 2021).

Consequently, recognizing the limitations of local resources, especially in cutting-edge technology and advanced battery manufacturing, the Norwegian government has, in collaboration with LO and Prosess21, implemented the BattKOMP1, 2 and 3 initiatives, which aim to expand education capacities, and restructure educational pathways to promote

continuous learning, with the goal of developing a skilled battery manufacturing workforce (Norwegian Ministry of Industry and Fisheries, 2021). In this long-term strategy, the Norwegian government emphasizes an indigenous development approach, as they aim to close the knowledge and expertise gap, by cultivating domestic expertise to meet future demands in the domestic battery industry.

Moreover, in their short-term strategy, the Norwegian government together with its partners, adopted an exogenous approach to catalyze the Norwegian battery industry, emphasizing the need of attracting foreign companies, expertise, external capital, and knowledge cooperation to strengthen the Norwegian competitiveness in the battery industry, as well as closing the knowledge and expertise gap required for a rapid growth for the domestic battery industry (Norwegian Ministry of Industry and Fisheries, 2021). According to Pike et al., this exogenous development approach is particularly relevant for localities or regions that lack abundant internal/ indigenous, arguing, that the development success of localities and regions are dependent on their ability to attract and integrate exogenous resources (Pike et al., 2017, p. 229). Pike et al. further emphasizes the Norwegian government's approach by arguing that external resources are crucial when local capabilities are insufficient to meet development goals and objectives (Pike et al., 2017, p. 229).

The Norwegian battery strategy highlights, therefore, that even though indigenous and exogenous development strategies are at some extent different, they are also connected, in the sense that policymakers can combine the two to meet both long-term and short-term goals and objectives (Norwegian Ministry of Industry and Fisheries, 2021). However, it also highlights how local development is influenced by external forces, as changes in markets and economic structures, discourse, and power dynamics can all influence local development, and therefore which strategies local policymakers utilize in their respective localities and regions (Pike et al., 2017).

However, Pike et al. highlights how different methodology and focus may affect how policymakers adopt exogenous development strategy, when trying to foster economic development in localities and regions. Emphasizing on how broader neoliberal economic models influence local exogenous development strategy implementation, especially when integrated to global value chains, Pike et al. illuminate the term “exogenous growth strategies”, when trying to illuminate how exogenous development efforts may be influenced

by broader neoliberal economic theories that treat technological change and other growth determinants independently of the regional capabilities, often emphasizing the reliance on external resources to stimulate local and regional growth and expansion (Pike et al., 2017, p. 62). Having its fundamental basis in exogenous development strategy theory, as it also seeks external resources, capital and technology, exogenous growth strategies on the other hand, with its strong emphasis on broader neoliberal competitive ideologies, places a stronger emphasis on attracting technology, labor, and capital as means to stimulate rapid economic growth and expansion, often prioritizing financial gains and expansion, sometimes at the expanse of social and environmental well-being (Pike et al., 2017, p. 62). The main concern here, however, is how power, through ideologies and broader external forces may influence how exogenous development strategies are emphasized, adopted and implemented.

Exogenous development strategies, as emphasized by Pike et al., illuminates the need for local policymakers to address challenges that these strategies may pose for residents, businesses, and also institutions, by creating an environment that attracts and adopts exogenous resources while at the same time considering social equity and sustainable development (Pike et al., 2017, p. 235). For local policymakers, however, this may involve formulating policies that do not only offer incentives to attract external investment, rather it should formulate policies that ensure that these investments contribute positively to the local economy and community long-term (Pike et al., 2017). These policies, drawing on indigenous development strategy approaches, may involve investing in local education, local innovation and businesses, and infrastructure, as means to build a resilient local economy that can sustain itself even if external investments decline. Pike et al. posits that effective policies together with strong institutional support are essential for managing the complexities of exogenous development strategies, as they help to ensure that they lead to sustainable and inclusive growth (Pike et al., 2017, p. 235).

Chapter 4.0 Method

This part of the thesis presents the methods that were used to collect relevant data that will be useful to have when we try to understand the thesis' research questions. The method part contains a presentation of the type of data that was collected and the background for choosing this exact type of data, which methods were used to collect this data, an explanation of which quality criteria that have been set to ensure valid and reliable data, which limitations the data provides for the thesis and finishes with the ethical assessments that have been made in the data collection.

4.1 What kind of data?

As the purpose of this thesis is not to emphasize a specific and clear answer to our research questions, but rather to explore it and provide a greater understanding of how sociotechnical imaginaries can influence the establishment of green industry and initiatives, such as Morrow Batteries, quantitative data will not be particularly useful in our research. Thus, we make use of qualitative methods that can help us uncover what different attitudes exist among the population and in the municipality, and which ideas Morrow itself has for their project, using personal narratives and discourse analysis. Clark, Foster & Bryman describe the use of qualitative methods as reliable methods for obtaining personal narratives, experiences and understanding: "*Both methods of data collection (qualitative interviewing and participant observation) that we have introduced here produce rich data that are grounded in the understanding and experiences of people as they go about their personal and professional lives. This data can then be used to generate theory that closely reflects and represents those realities*." (Clark et. Al., 2019, p. 229).

4.2 Choice of methods

In order to elucidate the research as best as possible from different points of view, we depend on getting an insight into what the various actors and stakeholders think about the matter, and we believe that this can be carried out most simply and best through the use of multiple qualitative methods, mainly document analysis of public data and media reports and articles. This provides useful information and perspectives that do not appear in the semi-structured interviews, which will contribute to a broader understanding of the socio-technical concepts that exist. There is a lot of relevant data in the form of reader posts and interviews in local media about the Morrow establishment, so the bulk of the data collection in this thesis will make use of this. In order to expand our data related to the various perspectives and attitudes, and also get answers to questions relating our research that did not get answered through document and discourse analysis, we also wanted to conduct some semi-structured interviews with relevant interviewees where you can go more in-depth (Clark et. Al., 2019, p. 211). This provides an invaluable insight into how the various stakeholders and actors think about the project, which may not be revealed in the public, and we also get the chance to ask questions about our research that we could not find in public media or documents. We also chose to make use of observation in the form of participation in a battery seminar to both expand our knowledge of the project, but also to get a direct presentation of Morrow's own ideas and ambitions for the project, and how they market this to the public.

4.2.1 Document sampling and analysis

Our main emphasis on data collection is discourse analysis, mainly from articles, interviews and letters to the editor in local newspapers. Discourse analysis is broadly concerned with the way which words and language are used to help to structure particular realities (Clark et. Al., 2019, p. 285), but it is also important to consider these realities as subjective, as language is not a neutral instrument. According to Clark et al., it is important to recognize the knowledge structures that are embedded in particular discourses as intertwined with power (Clark et al., 2019, p. 285), as formerly explained by discourse theory earlier in this thesis.

There is a lot of subjectivity linked to the project's establishment, and although we have explored several aspects of these through the semi-structured interviews we have conducted, we assume that there are also several relevant arguments and attitudes that emerge through various publicly available documents. The advantage of such documents is that these already exist "out there", and will be produced independently without being influenced by the request of a social researcher (Clark, Foster, Sloan & Bryman, 2021, p. 498). In this thesis, we refer to the word "documents" as Clark et. Al. describes it, namely as materials with the following qualities: *they can be read (though the term 'read' has quite a loose meaning in the context of visual materials, such as photos), they have not been originally produced specifically for the purpose of social research, they have been preserved so that they become available for analysis, and they are relevant to the concerns of the social researcher* (Clark et. Al., 2021, p. 498). As documents are not reactive, which means they do not let our techniques as social researchers impact the data, the validity of the data is more likely to be of high quality (Clark et. Al., 2021, p. 498).

In our thesis, we sampled both what Clark et. Al. refers to as "official" and "mass-media" documents, meaning they are both publicly available, though official documents are administrative records with high validity and objectivity, and mass media documents often are subjectively produced by engaged actors. As the interviews went on, we received useful tips on relevant articles and reports that were relevant for the research, as well as conducting our own research on the web for relevant data. During the search, we had Scott's (1990, in Clark et al., 2021) criteria for quality evaluation of documents in mind, namely the document's authenticity, credibility, representativeness and its meaning (Clark et. Al., 2021. p. 498) to avoid literature and documents which were not valid enough to be able to represent reality and thus give us the correct insight into the research problem.

The main source of documents were articles, interviews and letters to the editor in the local newspaper, Agderposten, as Agderposten have been the most prominent media actor in providing information, news and public discourse regarding Morrow's establishment. We also found a Youtube-clip from an online public meeting with relevant actors from Morrow, the municipality and other stakeholders, where engaged citizens could participate and ask

questions. This clip served as useful data for our research, as it emphasized the different sociotechnical imaginaries existing within the municipality. We also made use of official documents through the municipality's website where the municipality plan, business strategy and other relevant data was available. Press releases from Morrow's own website and strategy plans from the EU was also included in the data analysis.

4.2.2 Semi-structured interviews

An important part of the thesis is the perspective of sociotechnical imaginaries and how this can affect the establishment of green industries. This is a perspective that is difficult to collect through numbers and statistics, thus we considered it useful to use a more qualitative approach for data collection, as this provides a more personal experience (Clark et. Al., 2019, p. 210). We therefore chose semi-structured interviews with relevant actors and informants who could share their views on the establishment and their visions for the project from different perspectives. Through the use of this method, we hoped to gain a personal insight from the various informants about the motivation for the establishment from both a social, economic and environmental perspective.

In order to get the best possible breadth of the thesis, we chose to make use of personal and strategic recruitment, as we have good knowledge of the local environment in Arendal and a broad municipal network through previous political involvement there. As our main source of data collection is document and discourse analysis, and this covers most of our research questions, we found it unnecessary to conduct a lot of interviews, but as the data analysis did not cover all of the necessary data, we felt we needed, we chose to conduct a total of three relevant interviews. We understand that three interviews might seem like a small sampling, but according to Kvale (1996), when interviewing, you should include '*as many subjects as necessary to find out what you need to know*' (Kvale, 1996, p. 101, in Clark et al., 2019, p. 178). After the three first interviews were conducted, we felt we had enough relevant data to help our research, and hence felt it unnecessary to interview more people. First and foremost, we wanted the municipality's perspective on the establishment, and were therefore fortunate

enough to meet the head of business in Arendal municipality, for a physical interview in their headquarters as a representative of the municipality. We also found relevant informants through the document sampling, where one of the informants, a local and committed citizen, has had several reader's letters in local newspapers related to the establishment. The person is also a close friend and former political colleague of Silje Haugli, one of the authors of this thesis, so knowledge of the involvement was already present. We considered the particular informant relevant to the task because of his local affiliation, as we want to gain an insight into some of the local population's perspective on the establishment. However, it is important to point out that the person in question does not represent the local population's view of the establishment, but only contributes with one local perspective out of thousands. We were also able to arrange a kind of semi-structured interview with a representative from Morrow Batteries, although this was initially supposed to be a digital seminar with several students where we could submit questions in advance. We ended up being just the two of us together with the representative, so the seminar developed into a relatively personal and semi-structured interview. This gave us a good opportunity to go more in depth on the questions (which had been sent in beforehand) and create a communicative dialogue between us.

During all the interviews, an interview guide was created in advance that we could lean on, so it was possible to conduct the interviews in a more structured manner and without too many digressions (Clark et. Al., 2019, p. 213). We found this to be particularly useful, as the interviews were very engaging, and at times it became difficult to adhere only with the thesis's research questions. We also chose not to use an audio tape recorder, even though this was originally the plan, as the interviews were held a little more spontaneously than originally planned, and we thus did not have time to arrange it. However, this turned out to be unproblematic, as there were two of us who did the interview, and we could thus distribute the interview methods, where one conducted the actual interview and the other transcribed along the way. As a result of the findings becoming a written transcription of an oral conversation, all the informants had the opportunity to check quotations to feel that they were presented correctly.

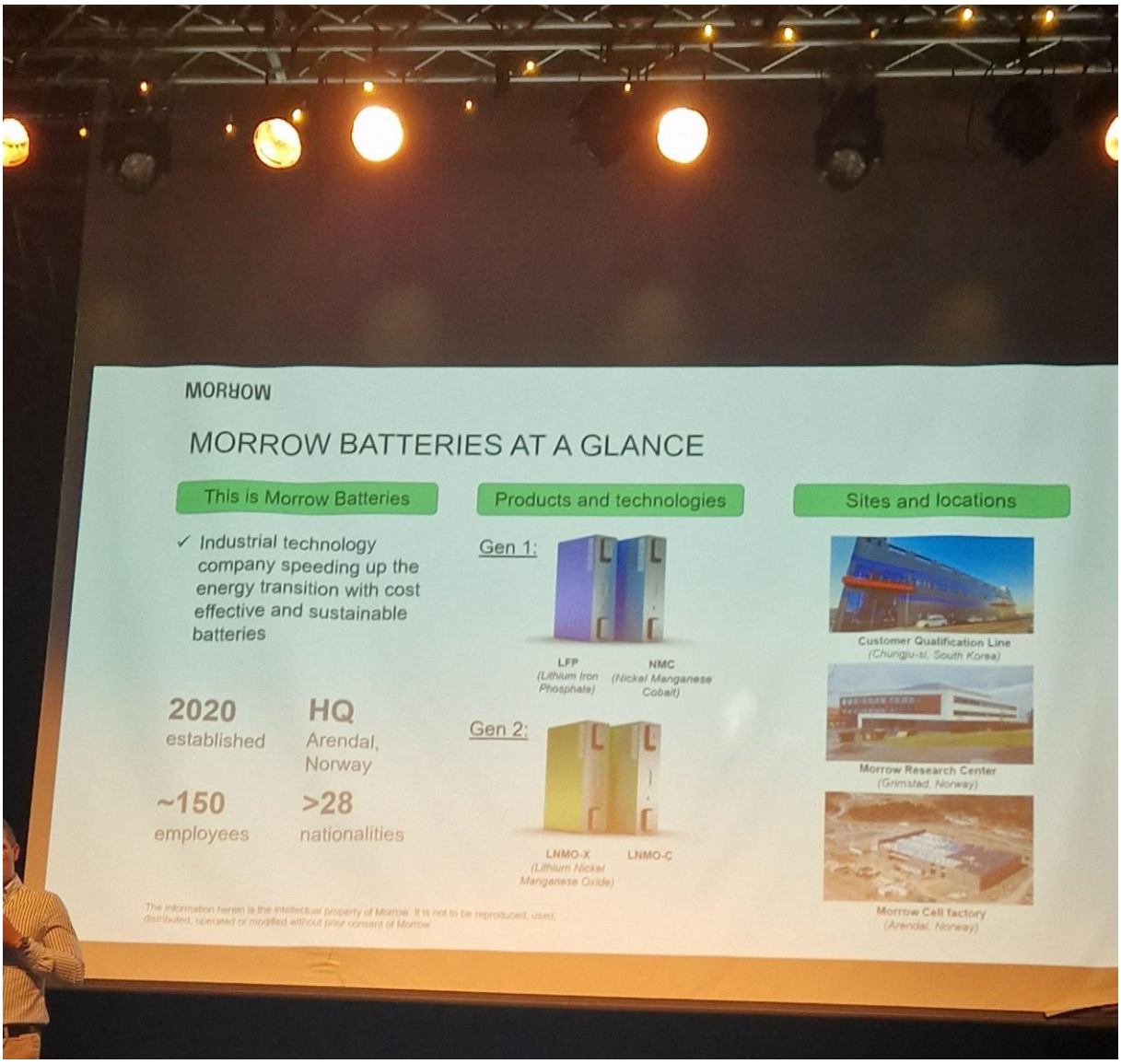
The qualitative, semi-structured method gave us a valuable insight into the various perspectives linked to the research questions, but as with all methods, it is not flawless. First and foremost, the semi-structured method ensures a certain lack of standardization, as this interview technique is relatively flexible and it can be difficult to be consistent across the interviews. In our case, we interviewed completely different people who, for us, represented completely different perspectives and actors, and a complete standardization was thus not necessary. Qualitative methods also provide a personal perspective, so they are not necessarily representative of how the various perceptions and visions actually are. We could have had a wider selection of informants through, for example, focus groups in order to both bring more perspectives into our research, but also to create debate and thus perhaps gain an insight into new perspectives that do not appear in the public eye. However, we opted out of this, as focus groups are particularly time-consuming to carry out, and considering the limited time and resource use of the thesis, we considered it difficult to implement. This could probably be interesting to conduct if the thesis were to be expanded and researched further. We also felt that the perspectives we received had enough depth to give us enough information and knowledge to answer the research questions for the thesis. A problem we could also feel during the interviews was our own subjectivity. Although we consider ourselves to have a relatively neutral point of view related to the establishment, it could be experienced as challenging to be neutral when we interviewed different people with different perceptions and strong opinions about the project.

4.2.3 Participant observation

Both the semi-structured interview with Morrow Batteries and our document analysis gave us good insight into much of what our research is asking about, but at the same time we thought it would be wise for the research to observe how Morrow itself presents their visions and plans to people in a more formal setting without us and our research as the focus. Hence, we wanted to use participation observation as a method, as this *"...is directed towards capturing the rich detail and diversity of experience that occurs "out there" in the human world. As the name might imply, it involves both participating in, and observing, everyday and/or professional life* ***as it happens***.” (Clark et. Al., 2019, p. 219), and "*are unstructured forms of observation. Qualitative, unstructured approaches to observation, such as participant*

observation, tend to involve the researcher encountering the people and events studied with an open mind in terms of what events and behaviors might become relevant to their research area: an inductive approach." (Clark et. Al., 2021, p. 258) Through participant observation, we could see what Morrow itself chooses to market as their visions and ambitions for their establishment in a less controlled and structured setting. In other words, we could see Morrow in a more natural setting as a business actor rather than a more formal representative as in our interview.

We chose to participate in a battery seminar organized by the University of Agder in Grimstad as an observation method where Morrow Batteries gave an introduction about their battery production and their ambitions for the project. The seminar was held on 13 November at Bluebox on campus Grimstad, and several relevant battery actors were present and had introductions. We chose to attend this event primarily to gain a deeper knowledge of the production, but also to observe which socio-technical imaginaries Morrow itself chooses to present. This was a closed event only for registered students and students at the technical lines on campus Grimstad, which we were not aware of in advance. We thus trooped up completely unaware that participation required registration. This is a problem we should have clarified beforehand, as Clark et. Al. highlights the difference between participant observation in closed and open settings (Clark et. Al., 2019, p. 221) and how different settings often will create different expectations of the researcher's behavior (Clark et. Al., 2019, p. 222). This was obviously a closed setting, so availability was primarily not a matter of course for us when we met. Fortunately for us, there were still places available, so we were allowed to participate despite not having signed up in advance.



(Foto: Batteriseminar. Privat: Silje Flaten Haugli)

As we arrived relatively early, before the other students, there were good opportunities for us to visit the stands of the various actors and talk with them. At the beginning there was a mingle event with tapas and drinks before we got a mixology course from the well-known bartender Per Magnus Haig, who represented Det Norske Brenneri, a local and famous distillery in Grimstad. All this set a cheerful and loose atmosphere in the room, which made the conversation with the various actors fluid and easy. After an hour, introductions were given by the various actors, including Pixii AS and Morrow Batteries, and we received a thorough introduction to the various actors' activities and projects and how it related to battery production. After the introductions, there was room for even more mingling and questions for

the actors, and we used the opportunity to get in touch with Morrow Batteries and clarify our intention with participating in the seminar, which was positively received.

4.3 Research quality

To secure valid quality of the obtained empirical data, we chose to not only follow Scott's (1990) four step criteria for quality evaluation of documents, but also reasoned about how the empirical data obtained from the interviews and participant observation could reach a high level of validity. We hence chose to set our own criteria:

- The number of interview respondents was enough in regards to the thesis' extent and to elucidate the research problem in a satisfying way.
- The respondents were not selected randomly, but had relevant titles for and/or knowledge about the thesis' research, commonly referred to as "non-probability sampling".
- The questions were open, meaning they did not lead in a specific direction or influenced the respondent in any way
- Our own attitudes and opinions were not revealed in any way to reduce influence on the respondents

We also want to be clear that the data of this thesis has been interpreted, thus it is our interpretation of answers and documents that forms the foundation of this thesis' research. Our interpretation may not necessarily be correct, thus the content and data in the thesis can may be based on erroneous and incorrect grounds. Misunderstandings and incorrect reproduction of the data obtained can occur, but in order to minimize the chance of this, we hence chose to send out a citation check to all the respondents afterwards so that they could feel with certainty that they were correctly reproduced in the thesis, and so that we could be sure that we have understood their message correctly.

We also considered that the use of several different methods would give a better quality in the thesis, so-called mixed methods, as the problem is so complex, and mixed methods give us the opportunity to go even deeper into the theme of the thesis, give us a more nuanced picture of the problem and illuminate several sides of it (Clark et. Al., 2019, p. 108). Such method triangulation can be helpful for comparing and contrasting the findings from the various sources, which can strengthen the validity of the data. The various methods can also complete each other if some of the methods are deficient or limited.

4.4 Limitations

As the thesis concerns the socio-technical imaginaries which exist among the local population, the municipality and Morrow Batteries, it is difficult to collect data that will be 100% representative unless we interview every single one of Arendal's 43,000 inhabitants and all relevant political and administrative organizations in the municipality. This will of course be impossible given the limited scope of the thesis. The data collection must thus be based on a limited selection of representatives of various stakeholders and interests, and extracts from opinions and claims in the public discourse. Hence, the data cannot explain to us what the various organizations, institutions and private individuals think internally, or whether there is disagreement among them. Especially in large political organizations such as the municipality, it would be reasonable to believe that there are disagreements about the project among the political and administrative organization’s hundreds of employees and elected officials. Thus, we will not seek a definitive answer to our research questions, but investigate it.

Battery production in Norway is also such a new topic that it is difficult to have something to compare it with. Different knowledge and perceptions about the project will thus often not be based on empirical and subjective experiences with it, but are often tied to the media's angle and Morrow's own dissemination of knowledge, which can have a limiting effect on the data collection and its results. One must also take into consideration that the factory has not yet started production in its factory in Arendal, thus the expectations for the synergies of such an establishment will not be based on facts and real experiences, but rather subjective thoughts

and attitudes. This could change as the project turns out to be successful or not. Hence, one must thus understand the thesis in the light of its time and realize its time-related limitation.

4.5 Ethics

When conducting empirically-based research with qualitative methods, it is important to make ethical considerations both before, during and after the research. As Clark et. Al emphasizes, ethics are a vital part of the research process and can be divided into several key concerns: informed consent, confidentiality, anonymity, avoidance of harm and privacy (Clark et. Al, 2019, p. 122). Their definition of ethics in social research is described as "*a set of rules by which individuals and societies maintain standards. This idea of ensuring integrity is also central to ethical practice in social research. Research ethics help to make sure that the relationships you build during the process of doing social research are respectful and constructive, and that your project does not endanger either yourself or those who you come into contact with.*" (Clark et. Al., 2019, p. 123). During our research, we used these principles regularly throughout to ensure that the respondents' sense of security in particular was maintained, and to avoid damage or negative consequences as a result of their participation in the project. To secure the research's validity, the project was first reported to SIKT (Kunnskapssektorens Tjenesteleverandør/the knowledge sector's service provider) for approval. People from vulnerable groups, children or people who for other reasons should be given special consideration in the research were not interviewed. It is also not relevant for the research to emphasize particular categories of personal data for the respondents. The application to SIKT was hence approved, and we can thus conclude that the research uses legal, ethically proper methods to obtain and store data.

4.5.1 Ethical considerations

With qualitative methods, especially semi-structured interviews, there are many vulnerability factors to consider. The most important is that the respondents can be sure that their anonymity will be maintained if it is desired, and that they will be made aware that their answers will be used and cited in our thesis (Clark et. Al., 2019, p. 122). This was made clear

to the respondents through a standardized declaration of consent that all respondents were sent together with the invitation to participate in the research project. There, they were also informed about their right to withdraw their participation in full, or quotes, and how their data will be processed during and after the end of the project.

There were also many ethical assessments to be made during the interviews. We were careful that we did not guide the respondents in any way or set up leading questions and answers that could influence them. We wanted respondents who would answer completely uninfluenced by us. The same also applies to us, as it can be easy to be influenced by the respondent and thus end up with a different interview or a different angle that you had not envisaged in the first place (Clark et. Al., 2021, p. 130). In particular, questions related to socio-political challenges and problems can be challenging for some responsible people to answer, so we wanted to create trust between us and the respondents and assure them that we are neutral to the thesis' content and are only looking for facts that can illuminate the issue for us. Thus, we wanted to assure the respondents that they could ask for a citation check before submission in order to feel correctly quoted if direct quotations were necessary, or that their answers from the interviews were reproduced, angled and used correctly. Some of the respondents had minor amendment proposals which were fulfilled.

When it comes to the document analysis, it is primarily important to ensure that the sources are authentic to prevent an unfortunate angle or misinformation in the assignment. You should also make sure that the data you retrieve is relevant and not expired or outdated information. As we did not make use of private documents, we only used publicly available documents that we considered to be authentic and valid due to them meeting several criteria for validity, which will be explained further in the thesis. Several of the documents contain subjective opinions, so the facts and claims have been checked by us to avoid misunderstandings or incorrect information. It is also important to be aware that the documents have been produced by an actor or stakeholder in order to influence to one degree or another, and that this is taken into account in our analysis of them.

4.5.2 Validity and reliability

In order to ensure the topicality of the empirical evidence, it is important to assess the validity and reliability of the data and ask if there is a context between the question addressed and the data that is collected, and if the empirical evidence of the data is relevant to evaluate the research questions (Clark et. Al., 2019, p. 319). The validity of the data is considered to be high as it originates from reliable, authentic sources and/or people with a high level of knowledge of the subject. The data that was sampled has provided enough insight into the topic to be able to answer the problem in a satisfying way and has given us unique insight into different perspectives. The participation observation also gave us a unique opportunity to meet the various actors in the battery at a more private arena, and thus to shed light on the topic as they would present it to a private person and not a researcher, which in turn gives a new perspective on the research. It must also be mentioned that one of the respondents in the semi-structured interviews is a close friend and former party colleague of one of the researchers behind this thesis, which in some cases could be considered to give low validity to the data.

Clark et. Al explains that by interviewing acquaintances, family and friends, there is a risk that unwanted situations may arise that can affect the validity of the data, such as the respondent answering what you know you want to hear for the research, or that they say too little as they assume that you already know what they mean. «*The information they provide is in question because their answers are shaped around your pre-existing relationship with them"* (Clark et. Al., 2019. p. 53). Thus, it is important to acknowledge the limitations this relationship can provide for the data, but as we already knew the respondent's opinions about the establishment, hence why they were invited to participate in this research, we determined together with our supervisor that the relationship was in no way limiting the validity. The methods that were used to collect data are quality-based and recognized in social research, and the data that was collected through these is considered to be correctly formulated and reproduced in the research as a result of an approved citation check from the respondents.

4.5.3 What could have been done differently?

A research project is rarely conducted as one intentionally had planned, and this thesis is no exception. We initially considered creating focus groups in order to create a dynamic debate about the project's research problem so that even more arguments and opinions could come forward, but unfortunately this could not be conducted as it is both time-consuming and difficult to organize, in addition to a lot of illness that has affected the time frame this half year. We also considered interviewing random people in the local area where Morrow Batteries is established in order to get a more local approach to the problem, but after a conversation with the supervisor it was decided that this was not considered particularly appropriate due to the low validity and reliability of the data, so the idea was shelved. More interviews could also have been conducted to gain an even deeper understanding of the topic and to have it illuminated from even more perspectives, but we considered the amount of interviews to be satisfactory enough to be able to answer the research problem, as the respondents had relevant titles and sufficient knowledge.

Chapter 5.0 Analysis

Having established the background for our thesis, in regard to research and relevance, theoretical framework, and empirical findings with the use of research methods to help us answer the thesis' problem statement and research questions, we aim in this chapter to connect these elements, with the hope of coming closer to an understanding and address our central research questions. This chapter focuses on understanding how EU's discourse about the green transition influences local sociotechnical imaginaries and exogenous development strategies in Arendal municipality, with a particular focus on the Morrow Batteries establishment. The chapter is divided into three analytical sections. The first part discusses the discourse surrounding the green transition in relation to the thesis, then in the second part analyses and discusses what "defines" Arendal's sociotechnical imaginaries based on our empirical findings, and how these are influenced by the dominant discourse in the green transition. In the final part, we will examine and discuss how Morrow's exogenous development strategies may affect local development in Arendal. By integrating our empirical results with the theoretical framework, we aim through this analysis to illuminate the complex interplay between discourse and sociotechnical imaginaries, and exogenous development strategies, in shaping the trajectory of the green transition in Arendal municipality.

5.1 Discourse in the green transition

This first part of the analysis will try to analyze the first part of our research question: "How do Arendal municipality policies and commitment toward the Morrow Batteries initiative in Arendal reflect EU's discourse about the green transition".

In analyzing how local political commitment toward the Morrow Batteries initiative in Arendal reflects EU's discourses about the green transition, we have chosen to focus on analyzing how the interplay between local policies and dominant European frameworks, notably the European Union's Green Deal and the European Battery Strategy intersects. This interaction, as we will try to elaborate, is illuminated through the lens of discourse theory and the empirical data from interviews conducted in Arendal, and documents and articles found

online, which offer insights into which values, interests and strategy that the local policymakers in Arendal have emphasized, which may reveal the discourse they operate under.

A major focus in this research has been the important role of discourse, and how local commitment and policies toward a project, like Morrow batteries, can be discussed and understood through discourse theory. Discourse theory, as argued through Jørgensen & Phillips (2002), emphasizes the view that our access to reality is always through language and discourse, with the orientation that our use of language doesn't just reflect the world around us as it is, we also actively contribute to shape and construct our reality with language (Jørgensen & Phillips, 2002, p. 9). An important aspect of discourse theory, however, is Jørgensen & Philips emphasis, when they argue that while meanings and representations (discourse) are indeed real, physical objects exist too, however, their meanings are shaped and defined through discourse (Jørgensen & Phillips, 2002, p. 9). This emphasis gives room to discuss the Morrow batteries initiative as a physical entity through discourse, as the initiative wouldn't be possible without the discourse that makes it possible. This discourse, as we have discussed, is the green transition, which in this research has been emphasized as a collective commitment to strategic environmental and economic goals and interests. As the European Training foundation has defined the green transition as

"…a comprehensive shift towards environmentally sustainable growth and an economy that minimizes reliance on fossil fuels and reduces overconsumption of natural resources, with the aim of addressing urgent climate and environmental challenges, while fostering economic opportunities and sustainable development" (European Training Foundation, 2022).

5.1.1 EU's Influence on Local Discourse

As the theory has revealed, the European Union, through their sustainable development plans and objectives, which they have operationalized through the Green Deal and the European Battery strategy, has promoted lithium batteries at the forefront of the green transition strategy (European Commission, 2024). Emphasizing the Brundtland Commission's three fundamental components of sustainable development: economy, society, and the environment, the EU have

through the European Green Deal strategic plan, with its goal of achieving climate neutrality by 2050, emphasizes renewable energy, energy efficiency, and a circular economy, and the European Battery Strategy, which highlights the need for Europe to increase its share of global battery production, which is currently dominated by Asia, with the strategy calling for a collective commitment to enable Europe to produce 30% of global lithium batteries by 2030, the research have highlighted how the dominant discourse driving the green transition have emphasized a techno-optimistic approach as means to achieve their sustainable development objectives and interests (Norwegian Ministry of Industry and Fisheries, 2021, p. 6) (Borkamo, 2022). As by combining both strategies, the idea that technological innovation and advancements are key solutions to environmental challenges becomes evident, the it promotes technological solutions as the natural pathway to sustainability and economic development, stressing the necessity of strategic autonomy, self-sufficiency, and sovereignty in critical sectors, as it promotes sustainable batteries an important focus in this surge (European Commission, 2024).

What makes the European sustainable development strategies and objectives a dominant discourse, however, can as explained earlier in the theory part, be understood through Foucault's power/knowledge perspective, on how power influences discourse (Snævarr, 2017, p. 250). In this context however, it might be argued through the fact that all EU member states are obliged to integrate EU regulations, strategies, and goals within their jurisdiction, including Norway, who through their membership in the European Free Trade Association (EFTA), and European Economic Area (EEA) are obliged to align national environment policies with EU environmental and economic frameworks, dictated by the European Climate Law (European Free Trade Association, 2024) (European Parliament and Council of the European Union, 2021, Article 1 & 4). Consequently, this also affects local environmental policy frameworks in Arendal, being subject to national policies, leading to an adoption and emphasis on the dominant techno-optimistic discourse in their policies and sustainable development strategies. The municipality's commitment to the Morrow Batteries project, one may argue, reflects this emphasis.

To understand these synergies, however, it becomes valuable to include the structuralist perspective, which argued through Giddens (1979), emphasize that human perception, action, and production of meaning are deeply influenced by systems and structures, arguing that

power is not always exercised through direct channels such as political decisions, rather, it understood to be deeply rooted in the basic structures that shape society (Snævarr, 2017, p. 28-29). The perspective helps understanding how overarching structures, such as the European Union and global markets, produce dominant discourses that influence local policies and political commitments. According to structuralism, these structures are not merely physical or institutional but also constituted by cultural and ideological frameworks that guide social, political, and private perception and action (Jørgensen & Phillips, 2002, p. 8). To add on this, a unique view structuralism provides, to elaborate on our previous argument, is the idea that these structures are not just physical or institutional, but are also constituted by cultural, and overarching ideological frameworks that guide social, political, and private perception and action (Jørgensen & Phillips, 2002, p. 8). We will now try to illuminate this understanding:

The linguistic and cultural structures: The main concern and strength of structuralism, as noted by Jørgensen & Phillips (2002), is the strong emphasis on understanding how language and other systems of signs create meaning within a culture, by analyzing the underlying structures, or rules and conventions, that govern these systems and shape the production of meaning (Jørgensen & Phillips, 2002, p. 139). This perspective becomes relevant in trying to understand how local production of meaning can be traced back to broader overarching structures. To illustrate this, one may look at the discourse around ‘sustainability’, ‘green technology’ and ‘green transition’ which produce a linguistic framework that shapes public and private perception, and more importantly, the rules on which they produce meaning around these terms. This because, from a structuralist standpoint, is discourses permeated with cultural values, making it possible, one may argue, to trace perception and production of meaning in society, regarding discourse, by analyzing the overarching structures that upholds them (Jørgensen & Phillips, 2002, p. 14).

Ideological structures: Structures play an important role in shaping ideologies at local and national levels. The structures can in our context, be understood as the underlying frameworks, norms, and values towards the green transition, which are influenced and shaped by overarching institutions, in our concern this would be the institution of The European Union (EU). This, because the increasing awareness of the need for a green transition, influence both public perceptions, understanding, attitude, and also policymaking, as evident at national level in Norway as well as local in Arendal municipality (Arendal kommune,

2019) (Norwegian Ministry of Climate and Environment, 2023). This ideological belief, structuralists may argue, is not random or isolated, but can be understood to be influenced by broader societal frameworks that align, in our case, with the EU's directives (Snævarr, 2017, p. 229-230) (Arendal kommune, 2019) (Norwegian Ministry of Climate and Environment, 2023).

Institutional and Regulatory Structures: Within the structuralist perspective, there is a firm view that local policymakers and private actors operate within a web of institutional structures, including laws, regulations, and policies that promote sustainable development. These structures, in regard to Arendal Municipality and Norway, can according to structuralist perspective, be traced back to the European Union's sustainability goals and policies, such as the European Green Deal, which set ambitious targets for member states and partners to align with. This is possible because through EU's directives and policies including the European Climate Law, the institution is able to establish a formalized system that influences how member states and private actors perceive and engage with sustainable development practices, including green technologies (European Parliament and Council of the European Union, 2021, Article 1 & 4). These goals and policies function as structural forces that push local actors and frameworks to align with the outlined objectives, and thus driving commitments to green technology projects like Morrow Batteries.

Economic Structures: Furthermore, the structuralist view also emphasizes the role of economic systems and structures in shaping commitments towards sustainability practices. Smith & Doe (2020) emphasize this view, by arguing that economic systems shape the development and adoption of green technologies by influencing the availability of funding and the priorities of businesses (Smith & Doe, 2020, p. 6). This, one may argue, affects how much money and support businesses and governments are willing to allocate to green technologies, influencing how easy or hard it is for these technologies to be developed. Thus, the economic structure creates conditions that either facilitate or hinder political or/and private commitment to initiatives like Morrow Batteries and technologies like lithium batteries. Furthermore, the economic incentives and support within the European Union, for developing green technologies, particularly lithium batteries, which includes tax breaks and grants, advocated by the European Union's Green deal program, is an example of economic structures that encourage investment and commitment to such technologies (The European Commission, 2024).

5.1.2 The Green Transition Discourse's Influence on Local Policies

The power certain structures have to legitimize certain discourses in society, as illustrated here, makes them able to dictate and push certain technologies and actions. By mobilizing resources towards certain goals and objectives, the EU is able, through the The European Battery strategy and the European Green deal strategic plan, to create a system that dictates the operational boundaries, consequently constraining actors to align their actions and priorities within the overarching structure, consequently influencing local policymaking and social action (Smith & Doe, 2020, p. 6) (The European Commission, 2024) (European Battery Alliance, 2024). Overall, this perspective demonstrates the interconnectedness of societal, political, and economic commitment and action, and overarching structures that are shaped and influenced, in our context, by powerful institutions such as the European Union, and how this influences local perception, attitude and expectation of promoted technological initiatives.

This has been evident by the Norwegian government's green transition commitment, allocating 15 billion NOK to support green transition initiatives, including the development of new green industries and sustainable practices across various sectors (Doe, 2024) (Regjeringen, 2021). At the local level, focusing on local policymakers in Arendal, the green transition has involved emphasis in commitment to renewable energy production, circular economy solutions, and new technologies such as production of lithium batteries, with initiatives like Morrow Batteries in Arendal municipality reflecting this emphasis (Arendal kommune, 2023) (Morrow Batteries, 2021). As evident Arendal municipal sub-plan for energy and climate for the period 2020-2023, when then, the municipality aimed to be a pioneering municipality for climate, energy and sustainable development, by becoming Norway's most climate-friendly municipality of its size (Arendal kommune, 2020, p. 30). One of the strategies to realize this vision was to support sustainable industry development, allocating resources to attract green industry to establish in the municipality, as eventually Morrow Batteries in 2020 decided to establish itself and its battery factory in Arendal, becoming the largest business establishment in Arendal in recent times.

The municipality's strategy and commitment, one may argue, reflect the embeddedness of local policies within broader discursive frameworks, as it mirrors EU's dominant techno-optimistic discourse and objectives. The municipality's sustainable development strategy and

commitment to the Morrow Batteries initiative, reflects the strong techno-optimistic approach, advocated by the EU, sympathizing the idea of technological innovation as the natural pathway to meet sustainability and economic development challenges. This was also emphasized by the business manager of Arendal municipality, when asked how he felt that discourses around the green transition influenced the municipality's commitment to the project, he answered:

> *"The motivation from the municipality's side was mainly the 2,500 private jobs offered by Morrow Batteries as a result of the establishment. The municipality was not fully aware of the various consequences that would arise from the investment, but has tried to adapt quickly and learn from other municipalities that have succeeded in what they are trying to do." (Business manager, 2024).*

This response, one may argue, reflects the municipality's alignment with the broader EU discourse that views technological innovation as essential for economic and sustainable development. Illustrating, one may argue, how local policies and action are shaped by, as well as contributing to these overarching structures. However, the influence of these techno-optimistic discourses is not without criticism. As in our interview with a local resident in Arendal, we asked him about how he perceives the discourse around the Morrow Batteries establishment to be among the local population, he answered:

> *"It appears very divided. Many people readily buy the glorified story presented by politicians and the administration, but we also see a growing proportion who are worried about the project. When Morrow was introduced, it was mentioned that by 2026 it would be producing 700,000 car batteries a year and have over 2,000 employees at the factory. Now we have reached the middle of 2024 and they are nowhere near the target. Morrow's advantage was that they would produce new technology, but now they will only produce batteries using ordinary technology, and this leads to more and more people becoming skeptical of Morrow's establishment. We saw the same thing happen with Freyr, which was supposed to produce batteries with reasonable, northern Norwegian power. They jumped right over to the USA because of strong subsidies there, and now the rest of their factory is to be shut down and sold, while the board has paid out large multi-million bonuses to themselves. The difference is that Freyr was created on a completely private initiative, whereas in Morrow's case*

> *it has strong public ties and greater capital risk which will ultimately pass on to the citizens if it fails."* (Local skeptic).

Furthermore, when asked how he felt the debate around climate change and green transition affects the project's establishment and people's perception of it, he answered that:

> *"I feel the whole thing was presented as a green project that deliberately took advantage of the green wave. It was used as a ruling technique to silence critical voices, portraying being critical of Morrow as being critical of climate change and the green shift. The Morrow project is very reminiscent of Ibsen's play "An Enemy of the People" (1882). In the play, the town's spa, their main source of income, contained poisonous water. When a doctor tried to speak out about this, he was rather chased out of town than people listen to the criticism. This is also how Morrow is portrayed: people are only "negative" if they are critical of the project. There is little point in coming to Morrow's public meetings to be served a piece of cake and nice canapés. Morrow is not interested in listening to the criticism. It all appears as a "game for the gallery" (ref. spill for galleriet). The whole thing is perceived as very little nuanced, where one is either portrayed as negative, or there is a hallelujah atmosphere. Agderposten has tried to be more neutral, but I miss more critical journalism on the agreements that exist between Morrow and public actors."* (Local skeptic).

The local resident's answer touches many critical arguments and aspects toward the green transition discourse. The first part of his answer, highlight the critical view of Di Felice et al., (2021), when arguing that the EU operates as an active narrator in the green transition, stressing the concern the way a problem is framed in policy narratives, reveals underlying assumptions about what is considered as being problematic, and consequently, what solution are deemed appropriate and "normal" (Di Felice et al., 2021, p. 5-7). This concern, one may argue, reflects the skepticism highlighted here, about whether the project truly serves the community's best interests or if the main concern of the political leaders in Arendal is to align their policies with broader environmental narratives. A valuable aspect of the resident's critical view, however, is that it also aligns with Pike et al. 's (2017) emphasis on the need for local policymakers to address the social equity and sustainability aspects of exogenous development strategies (Pike et al., 2017, p. 235). The skepticism and criticism expressed by local residents reflects the concern that while exogenous resources can bring significant

economic opportunities, they must also be balanced with genuine local engagement and a holistic consideration of the long-term impacts on local communities, where the strategy are adopted.

This criticisms emphasise our view of the green transition, as being a discursive process, as we draw our inspiration from Jørgensen & Phillips's (2002) understanding of discourses as being dynamic, because the meanings of words and concepts evolve over time as language is used in various social contexts, as language is employed differently by different groups, and also in the sense that it involves contesting views and debates about how the green transition should be emphasized, understood and defined (Jørgensen & Phillips, 2022, p. 9).

From a discourse theory standpoint, utulizing structuralist perspectives, we may argue that the establishment of Morrow Batteries is not merely an aftermath of a series of isolated decisions and ideas made by independent actors. Instead, it can be understood to be deeply embedded within a complex interplay of linguistic, cultural, institutional, economic, ideological, and social structures (Snævarr, 2017, p. 229-230). Together, however, these structures shape the green transition discourse in local communities, by influencing production of meaning, perception, engagement, and therefore expectations of sustainable initiatives and projects, in local communities as well as the region. This is possible, as broader structures shape the green transition discourse in local communities, by influencing production of meaning, perception, engagement, and therefore local policies regarding sustainable initiatives and projects. This, one may argue, highlights how this transition is able to affect key dimensions of social structures, restructuring political, economic, and social structures to align with broader narratives, as these collective commitments reflects the interconnectedness of efforts towards sustainable development discourse, and notably, EU's Green Deal strategic plan and the European Battery strategy (Norwegian Ministry of Climate and Environment, 2024) (Doe, 2024). This is evident, as we have discussed, in how policymakers that want to take part in the green transition, like Arendal municipality, are using their authority to restructure their societies, strategies and interests towards the green transition in alignment with broader EU frameworks (Regjeringen, 2021).

5.2 Arendal's sociotechnical imaginaries

With the green transition and EU's offensive battery strategy and ambition in the renewable energy market, Morrow Batteries emerged with a goal and vision to meet this renewable energy demand with lithium batteries with continuously improved properties. The support from the local government, however, was crucial in securing the final agreement for the project, with the City Council unanimously approving the construction of the factory in Eyde Energy Park in May 2021. The formalised partnership between Morrow Batteries and Arendal municipality was met with sheer enthusiasm by both parties, as the CEO of Morrow Batteries shared his thoughts:

"The agreement with Arendal comes as a result of good cooperation and solid political support. Eyde Energy Park provides an ideal setup for us and meets all the fundamental requirements for a large-scale battery cell factory, such as access to green energy, infrastructure, skilled labor force and raw materials. We look forward to continue our collaboration with Arendal municipality to establish the world's most sustainable giga factory" (CEO of Morrow Batteries, in Morrow Batteries, 2021).

Local political and business leaders, including Mayor Robert Cornels Nordli, have been largely supportive of the initiative (Nordli, 2023), together with the municipality. In an online public meeting where local residents were included, he addressed the Morrow Batteries project as a pivotal development in the municipality's history, emphasising its potential to drive economic growth, including approximately 2,500 jobs, substantial annual export revenues, and influx of new residents, but also contribute to the municipality's commitment to take part in the national green transition, where the project is planned to play a key factor for their sustainability efforts and vision for the future (YouTube, Arendal kommune, 2021). These expectations are also affirmed by our interview with the local business manager, who emphasised the need for private jobs in Arendal:

> "*The most important focus has been to create more jobs in the private sector. The municipality has been concerned about living conditions challenges in the municipality, especially with regard to the number receiving social assistance. The*

> *municipality has tried various measures to overcome the problem, but sees that it has had limited effect. The municipality has concluded that what is needed is a private investment to stimulate increased employment."* (Business Manager of Arendal Municipality).

However, in such a context, as the project has shown so far, the municipality have had to commit and allocate substantial resources, plan regulations, including land and infrastructure, highlighting the significant stake the local government in Arendal place, for the success of this initiative, well knowingly that no private project can ever guarantee success to meet any visioned goals. When we asked if the municipality is willing to take the chance of betting on an initiative that cannot guarantee success, the business manager answers that they are not concerned about the risks, as:

> "*…the value of the land area is valuable even if Morrow does not become a success. Morrow has not received subsidies from the municipality, but loans from the state. There is therefore little risk to the municipality's finances*" (Business Manager of Arendal Municipality).

As much of the critique towards the establishment regards financial risks for Arendal municipality, there seems to be some miscommunication between the municipality and the locals, as our local sceptic says in our interview that:

> "*Arendal municipality has given a guarantee to build and finance the battery road and cooling to the factory, which is a big financial risk. They have also, in practice, given away the plot for free to Morrow on the premise that Morrow is "making do". In other words, the project does not have to be a great success to keep the plot, they just must not cease. Morrow has also demanded that Heftingsdalen (waste disposal facility) is being redeemed, which causes Arendal municipality and Agder Renovasjon estimated costs of around NOK 200 million. In addition, Morrow shows an unhealthy use of money through the fact that they have covered share speculation in their own company for their own employees* (Skeie Fosse, 2024). *The fact that Å Energi is the main owner in Morrow and has invested a lot of money also shows a wild speculation with the citizens' money. I perceive it as very understated how much Å Energi and the municipality have actually risked. It appears to me that it is more important for*

Arendal municipality to get the Morrow factory here than for it to go to Kristiansand, no matter the costs" (Local sceptic).

(Figur 4: Snoren klippes. Photo: Cay Nordhaug in Industri Energi, 2023)

5.2.1 Consensus or conflict?

Even though uncertainty is a natural component in any private enterprise or initiative, it is also a natural source for resistance, conflicting opinions, and debate, which should be perceived as a driving force for democratic development as emphasised by Chantal Mouffe (2013). Uncertainty makes people speculate, make up their own assumption and conclusion about an uncertain event, especially one that is going to affect their lives, either good or bad. From an agonistic planning point of view, the municipality should not seek to redeem consensus for the establishment, as this only amplifies the hegemonic structures in the public discourse, but rather aim for trying to recognize different power structures, interests and disagreements, and consider conflict as a way to amplify our democratic society and not exclude different attitudes and views. It seems that both the municipality and Morrow

Batteries have chosen to seek consensus for the establishment, but at the same time accepted the fact that it is not realistic. To seek acceptance from the locals, Morrow themselves have tried different communicative approaches like holding “open day” and “Morrow Monday", a monthly information meeting where they meet with movers and shakers in politics, academia, public sector, and business across Southern Norway, according to the representative from Morrow. They also respond to critique and skepticism through chronicles in the local newspaper to inform the population, as they believe much of the criticism among the locals is directed to people thinking they get too many benefits, especially in regards to finances and limited resources for electricity and power. They do recognize partial disagreement among the population, but perceive the population as generally positive and feel that they themselves face little resistance when it comes to acceptance among the locals and the municipality.

Even though Morrow Batteries are experiencing minimal resistance to their establishment among the locals, there is no doubt that the initiative has sparked significant discussions among local politicians, residents, and private stakeholders. While the political and economic benefits and interests are clear, the local community's views on the project are mixed, according to our interview with the local skeptic, who stated that:

> *“It appears very divided. Many people readily buy the glorified story presented by politicians and the administration, but we also see a growing proportion who are worried about the project.”* (Local skeptic).

Arendal’s business manager explains how they experience how the establishment has been received by the locals by pointing out that the project is in the early phases of the production:

> “*The municipality experienced that the local population was very proud that the municipality won the tug-of-war over the establishment of Morrow, but we probably underestimated how long-term this project would be. We feel that enthusiasm among the population has fallen, due to the time the initiative has used to realize its plans and create offers and jobs. During December this year, it is planned that Morrow will produce 7 batteries per minute, 3.6 million per year, i.e. upgrading to large-scale production. We believe that the attitude towards the project will change when Morrow starts announcing customer agreements and employment in the autumn. The municipality feels that much of the attitudes in society are influenced by how far*

> *Morrow has come. and that the majority of those who are most critical in reader posts and opinions often do not appear at information meetings that are held*" (Business manager of Arendal Municipality).

This was also evident during an online public meeting, such as the one held by Arendal Municipality in December 2021, where residents expressed both support and concerns about the project's potential impact (YouTube, Arendal kommune, 2021). Some of the supporters of the initiative highlighted the potential job opportunities and economic benefits, whereas some critics raised concerns related to the potential environmental impacts, allocation of land area and use, and the social-economic implications of such a large-scale industrial development (YouTube, Arendal kommune, 2021). In the public meeting held by Arendal municipality, the meeting was led by Mayor Robert Cornels Nordli, and multiple relevant actors were all invited to express their thoughts, visions and information about the road forward for the Morrow Batteries initiative (YouTube, Arendal kommune, 2021). The meeting also included local residents in Arendal, as they had the opportunity to ask questions about the initiative, and express their opinions (YouTube, Arendal kommune, 2021). In the online public meeting, however, it is visible that all the present speakers from the municipality and Morrow Batteries had all the same agenda and visions about the initiative, where the expressed emphasis about the project, from the speakers, highlighted how the project aligned with global trends toward green energy solutions, its potential to reduce carbon footprints and promote sustainable energy practices. They also emphasised its potential to foster job opportunities and to revitalize the local economy and drive technological innovation, how the initiative may position Arendal as a progressive leader in green technology, making it an attractive location for further industrial investment, and environmental advancements, envisioning Morrow Batteries as a key driver for positioning Arendal as a leader in sustainable technology and economic development (YouTube, Arendal kommune, 2021).

Each of the speakers from the municipality and Morrow Batteries, seemed to stress the crucial necessity for the project to succeed, emphasizing the potential benefits the municipality will enjoy if the project do succeed, also highlighting the different challenges for the project to succeed as both technical and political, as the project is complex and need different actors to cooperate in order for the initiative to bear fruit, but also new technological innovation such

as autonomous electrical transportation vehicles to transport products to the Eydehavn (YouTube, Arendal kommune, 2021). The local residents, however, that took part in the public meeting had the opportunity to ask questions in the chat, where some of them were positive to the initiative, and others raised some concerns. The positive opinions toward the initiative highlighted also the potential job and economic growth opportunities that the project could bring to the municipality, as some concerns asked about the environmental sustainability of the project, especially regarding the extensive energy requirements and the potential local environmental impacts (YouTube, Arendal kommune, 2021).

Furthermore, in news articles in the local newspaper, some local residents have expressed their concerns about the project's success probability, highlighting the initiatives' complexity, necessary resources and funding, and also the local politicians' investment in an uncertain business model, allocating resources that are badly needed by the local residents (Monrad, 2024). Our local skeptic points out in both our interview and in the local newspaper Agderposten, that Morrow Batteries does not seem to bring any significant new technology to the table, but plans to rely on conventional production methods, and amplifies his skepticism:

> "*There is little indication that it will be a success. It is a high-risk project. The state refers to loans to battery factories as high-risk loans, and Morrow will compete in an international market against the Chinese, Europeans and Americans*" (Local skeptic).

Furthermore, he expresses his anxiety about where the funding for the project's estimated 30 billion required funding will come from, as the local government and other stakeholders appear cautious, where a major investor has already withdrawn the project (Monrad, 2024). Also, he expresses skepticism about the level of support from the government and local municipalities, given the financial risks and the need for special electricity pricing arrangements, which is controlled by Å Energi, a company with a public ownership structure (Monrad, 2024). Lastly, the resident compares the situation, surrounding the initiative, to the play "An Enemy of the People" by Henrik Ibsen (1882), suggesting that the local elite in Arendal are all in agreement about how the initiative, portrayed as a healing bath, is going to cure the city, with its important revenue stream, this, despite that the municipality's doctor has proven that the water is seriously polluted and causing damage, however, incidentally, this doctor is chased away from the scene, so the local business and politicians will not have to

listen to such inappropriate negativity (Monrad, 2024). This metaphor, one may argue, highlights a fear that legitimate concerns and critical voices about the Morrow batteries initiative might be dismissed or suppressed by the political and economic elite, ignoring potential risks or negative outcomes to preserve their economic interests and visions for the initiative and municipality (Monrad, 2024).

Local politicians in the municipality have also used the local newspaper to emphasise their opinions, thoughts, visions and information about the Morrow initiative. An example is found in an article in the local newspaper Agderposten, with the title "Time to Highlight Agder's Advantages". In the opinion panel we find Arendal Municipality's Business Manager, together with multiple local business actors and leaders, who collectively highlight the region's and municipality's strong potential for economic growth, sustainable development, and potential to attract both new private establishment, but also new skilled labor that is sorely needed in the municipality (Andersen et. Al., 2024). The leaders further express a strong belief in the region's capacity to attract new business ventures, showcasing Morrow battery factory as an example. This is possible, they argue, because of the strategic advantages Agder has, such as its proximity to Europe through the Eydehavn, abundant renewable energy resources, and established logistics and infrastructure which include ports, airports, and rail systems (Andersen et. Al., 2024). They further emphasize that Agder is not only in national competition, but also on an international level, particularly in industries related to the green shift like battery production and renewable energy. This international competition is also a recurring concern in the local skeptics' critique, as he is skeptical regarding Morrow's chance to succeed in the "battery race" against international, big tech corporations like Tesla and Samsung, as he states that:

> "*The Morrow project can be compared to when Norway was to become a major car manufacturer in the 1950s and was to compete against the rest of the world. A total of 4 copies of the Troll car were produced, and after that it was over*" (Local skeptic).

This statement is rejected by the business manager, as he on the other hand compares the establishment to a whole different story:

> "*When history is written, people should be able to look back and see that Arendal tried, Arendal took a chance and did not let the opportunity slip away as we did*

during the transition from sailing ships to steamships 150 years ago» (Business manager of Arendal Municipality).

However, the local leaders were optimistic about leveraging Agder's unique attributes, like its rich cultural offerings, which they argue will be a key factor in making the region an attractive place for professionals and their families to establish themselves, as this aspect is emphasized as crucial for sustaining long-term growth and development. Furthermore, there is a clear emphasis on the need for a sustained, collaborative effort to promote Agder's advantages. This includes the importance of government support and strategic public-private partnerships, such as financial incentives for green industries and support for new ambitious initiatives like Morrow batteries, from the Norwegian government and local private partners (Andersen et. Al., 2024).

Meninger →

På tide å synliggjøre Agders fordeler

Hvorfor velger noen av landets kløktigste forretningshoder å etablere seg i Agder? Og hvordan får vi enda flere til å etablere seg, og til og med skape nye arbeidsplasser i regionen vår?

TETT PÅ VERDEN: Nærhet til Europa er noe av det som gjør Arendal og Agder attraktivt for næringslivet. Næringslivet her også noen utfordringer, skriver flere forfattere i denne kronikken. Her sees gjestehavna i Arendal en sommerdag. FOTO: FRANK JOHANNESSEN

(Figur 5: Tett på Verden, Frank Johannesen, in Agderposten, 2024)

5.2.2 Conflictional Imaginaries

According to NRK Sørlandet, around 70% of the local citizens in Arendal have faith in Morrows' success, while 25% answer that they have "little to no" or "not at all" faith in the project (Bierud & Myklebust, 2023). In their interviews done with local citizens, people are hesitant to prejudge the project as a success, but also positive to the establishment. One local said:

"Yes, I think they will make it happen, but the question is whether it will pay off in the long run», while another citizen was not quite sure how she felt about the project due to its complexity: "*I think it's hard to know. It's a big deal*" (Bierud & Myklebust, 2023).

The article emphasises our local skeptic's allegations that people are divided in their perception of Morrow, as the survey shows that ¼ of the whole municipality is skeptic og negative to the establishment in one way or another. It also emphasises Morrow's and the business manager's perception that most people are happy about the establishment, as almost ¾ in the survey said they "to a large extent" or "to some extent" have faith that Morrow's battery project will be a success (Bierud & Myklebust, 2023).

In another interview in the local newspaper, however, the business manager shared several thoughts regarding the Morrow Batteries initiative (Andreassen, 2023). With his article titled "- If Morrow fails, it is a sign that Europe is giving up the fight against China", he stressed the notion that *"...there is no plan B for the industrial site intended for Morrow Batteries' factory"* (Andreassen, 2023), emphasising the municipality's unwavering commitment to the project's success. He expressed an optimistic view about Morrow Batteries' approach, noting that the company is leveraging on new technology, as well as securing and attracting global skilled workers, also with the support from substantial large industrial business owners (Andreassen, 2023). Furthermore, he also expressed concerns about the initiatives success, as being dependent on external support and cooperation, notably the critical role of the Norwegian government's decisions to further supporting the industry, and Morrow Batteries

particularly, stressing the concern that government actions and a new battery strategy aiming to make Norway a leader in the battery industry in Europe, will make the difference for Morrow's success (Andreassen, 2023). Adding the concern that Norway and Europe have ought to be more offensive in their competitive approach toward China in the battery industry, he emphasizes the need for a greater detachment for the Norwegian government and EU, from Chinese products (Andreassen, 2023). He also stresses the need for governmental funding and planning for the establishment municipality:

> "*One of the challenges we experience is that the state has few measures for growing municipalities. They want green initiatives, but there is no money for establishment and development. The municipality therefore feels that we are in a dilemma, as the establishment will lead to growth, but the state will not contribute financial resources to accommodate this growth. It is a long way from what the Minister of Industry says to what the Ministry of Finance believes is right for the state to contribute with*" (Business manager of Arendal Municipality).

This is also a recurring concern according to our interview with Morrow, as their representative emphasises that the lack of Norwegian EU membership prevents the company from receiving more capital for the establishment and production, as the EU puts 3 billion euros on the table as a support scheme for battery production in the EU in the period up to 2026 (Ask, 2023).

5.2.3 Broader Influences on Local Initiatives

An important aspect about the political leaders' expressions in the articles highlighted above is how their vision, understanding and emphasis about the initiative does not only emphasise a local focus, but also how their efforts and the potential benefits and challenges, are influenced by broader structures, notably the Norwegian government, and the EU (Andreassen, 2023). One of the business manager's main emphasis is on the competitive pressure from China, and the need for Europe and Norway to strive for greater independence in battery production and technology to avoid reliance on Chinese imports (Andreassen, 2023). Emphasising the EU's dominant techno-optimist imaginary, where technology is seen as an unquestionable good, anchored in a discourse that frames sustainability concerns as security concerns, termed the

"securitization" of energy policy, emphasizing that sustainability concerns can be solved through rationally chosen technological solution (Di Felice et al., 2021, p. 3)

Habermas' communication theory provides important insight into the understanding of how power influence sociotechnical imaginaries through discourse, emphasizing that communication structures do not necessarily produce neutral information, but political and moral meanings, with the intention of influencing people's perception and understanding of a phenomenon, influencing their sociotechnical imaginaries. Furthermore, as the business managers' emphasis on the competitive nature of the green transition between China and Europe reveals, it is also visible that local discourse and imaginaries, emphasized by policymakers and private actors are deeply influenced by broader discourses and imaginaries, where the EU's dominant techno-optimist imaginary operates as a dominant imaginary that influence both regional and local sociotechnical imaginaries by influencing the discourse that is communicated in the different structures of society. The EU operates, one may argue, as an active narrator in the green transition (Di Felice et al., 2021, p. 3-4). Emphasizing the structuralist perspective, and how local structures are influenced and shaped, and imbedded in overarching structures, through dominant imaginaries, this thesis wants to emphasize the concern highlighted by Jasanoff and Simmet in Araújo et al. (2022) arguing that *"sociotechnical ventures may be putting at risk the imaginary of local needs in favor of the global imaginary of future renewable energy and innovation"* (Araùjo et al, 2022, p.4), as they emphasize that *"...In this way, the normative and critical view argues that these sociotechnical can be integrated into desirable futures, rather than being planned futures, which seem predetermined by economic or technological needs"* (Araújo et al., 2022, p. 4).

5.3 Exogenous development strategies meet local development

This part of the analysis seeks to examine our second part of our research question: "How do EU's discourses about the green transition affect exogenous development strategies in Arendal?"

The Norwegian battery strategy, as discussed in the theory part, has adopted a dual development approach, emphasizing both indigenous and exogenous development strategies, as means to achieve their objectives of developing a leading global battery industry in Norway, in alignment with broader European policies, in the context of the green transition (Norwegian Ministry of Industry and Fisheries, 2021). Their long-term development strategy, as discussed, emphasizes the indigenous development approach, by focusing on leveraging internal resources such as industrial expertise, leading manufacturers of critical materials essential for battery production, and its near 100% renewable energy source, but also developing internal resources as the battery strategy focus stress the need of expanding education capacities, and restructure educational pathways to promote continuous learning, with the goal of developing a skilled battery manufacturing workforce (Norwegian Ministry of Industry and Fisheries, 2021). The short-term strategy, on the other hand, highlights an exogenous emphasis, as it seeks to attract external resources, particularly expertise, skilled workforce, and investments as means to foster rapid growth potential, required to succeed in this emerging battery industry (Norwegian Ministry of Industry and Fisheries, 2021).

Arendal Municipality, in partnership with Morrow Batteries, as we will discuss further, have found themselves in the same situation highlighted above, with the lack of necessary expertise and skilled workforce within the municipality and the region, making it challenging to operationalize their battery factory in Arendal (Norwegian Ministry of Industry and Fisheries, 2021) (Arendal kommune, 2021). Also, recognizing the critical need for rapid growth to ensure the success of the battery initiative, Arendal Municipality have together with Morrow Batteries adopted a multifaceted approach to address these concerns, as they both emphasize the critical importance of attracting external expertise and skilled workforce, as well as the influx of subcontractors, new companies, and external investments to support the factory's operations (Arendal kommune, 2021) (Morrow Batteries, 2021). This short-term strategy, as highlighted in the theory, reflects the characteristics of exogenous development strategy, as it aims at quickly closing the knowledge and expertise gap by utilizing external resources, as they are planning to attract external expertise and skilled workforce, influx of sub-contractors and new companies, and attracting external investments to support the battery factory (Arendal kommune, 2021) (Pike et al., 2017, p. 229). The focus of this analysis will therefore be on the local impact of adopting exogenous growth strategy on local development, focusing on the social impact of the Morrow Batteries initiative in Arendal municipality.

5.3.1 Social and economic impact

The establishment of Morrow Batteries in Arendal is expected to generate substantial social and economic benefits, primarily through the creation of jobs and the resultant population growth. According to a ripple effect report by Menon Economics, they note that in addition to the 2,500 new workers that is expected to be directly employed at the factory, the Arendal region could also see around 1,000 additional jobs created due to these ripple effects, leading to an estimated population growth of approximately 6,000 people as the workers' families is also expected to move to the municipality (Menon Economics, 2022, p. 4). In our interview with the business manager of Arendal Municipality, it was indicated that the municipality forecast even higher population growth expectancies than the one Menon Economics estimated. As the business manager of Arendal municipality noted that:

> *"The municipality envisages that around 6,000 new, private jobs will be established as a result of the initiative. On top of this, the municipality also envisages that this will attract around 8,000-10,000 new residents"* (Business manager of Arendal municipality).

However, this rapid growth has also represented complex challenges for local policymakers, residents and private actors. Morrow Batteries' necessity for external resources, such as raw materials, labour force, and expertise, has led to the expectation of a substantial influx of new residents to the municipality and the surrounding region. These new residents are expected to come primarily from South-Korea in the beginning, as the main pull-factor is argued to be the substantial employment opportunities created by the factory and newly established research centre in Grimstad, and related ripple effects of the initiative.

With an estimated influx of thousands of new residents within the municipality over a relatively short period (compared to "normal" population growth), significant pressure on the housing market is anticipated. It is projected that approximately 2,600 new housing units will be needed to accommodate the new residents, in addition to the housing development required for the expected population growth independent of Morrow's establishment (Menon

Economics, 2022, pp. 5-6). According to the report, the policymakers in the Arendal region plan to increase the number of regulated plots for housing as a direct response to Morrow's establishment, however, many of these plots remain undeveloped. In our interview with the business manager of Arendal municipality, he stressed the concern that the issue was on the developers' lack of sufficient capital to develop these plots, as the municipality has delegated the responsibility of housing construction to the private sector:

> *"The municipality is experiencing a squeeze where private housing developers do not have enough capital to establish enough housing, and where the banks do not want to finance this. The municipality is concerned about a housing crisis, where the municipality suspects that the region will not manage to build enough housing for all the workers who are coming"* (Business manager of Arendal municipality).

This situation highlights the potential for an upcoming housing crisis in the coming years, as the demand for housing is expected to exceed supply capability, potentially leading to high prices for plots and housing units and a strained housing market. The concern here is the perceived decency by the municipality, who in this situation is dependent on private developers to meet the housing needs, who also in this situation lack sufficient capital and adequate municipal zoning needed to provide these needs. Another concern is that this dependency can put pressure on existing infrastructure and resources, leading to potential conflicts with long-term residents and established businesses. Furthermore, as Pike et al. (2017) argue, the influx of new workers and businesses can lead to uneven development, where certain areas may benefit more than others, exacerbating social inequalities (Pike et al., 2017, p. 230).

Stressing the concern that if the large population growth materializes, the situation for Arendal might experience major ripple effects in the form of increased trade and use of services in the municipality. People need food, clothes, hairdressers, health services, cultural facilities and a whole host of other services that are necessary for a good life. The municipality has drawn up a new action plan that sets guidelines for how they will prepare for

the next four years as means to integrate the workers, as many of Morrow's workers are from abroad who may lack relevant skills and competence due to the changing environments when they move to Norway. Many of the workers come with various disadvantages, for example a lack of equity capital to buy homes, a car license and so on. The municipality have hence been the initiators of setting up "Welcomehub", which according to our interview with the business manager, is:

> *"An initiative that helps those who come to the municipality to thrive and integrate. Morrow has entered into an agreement with the initiative as part of the integration process for workers coming to the municipality. The initiative offers a welcome package with, among other things, discount coupons for shops and activities to motivate people to use the city"* (Business manager of Arendal municipality).

The municipality has been clear in communicating to Morrow that they are not just here to build a factory, but that they also affect the entire local community. The municipality sees that the new workers will be able to influence the local community both economically and socially, and has tried to motivate the business community to develop services that will accommodate the new residents of the municipality.

This emphasis by the municipality, one may argue, highlights the policymakers' recognition of the multifaceted impact that Morrow Batteries will have on the municipality. As it emphasizes Pike et al.s (2017) concern, that stresses the need for local policymakers to address challenges that these strategies may pose for residents, businesses, and also institutions, by creating an environment that attracts and adopts exogenous resources while at the same time considering social equity and the effect these strategies have on the community (Pike et al., 2017, p. 235). The municipality's new action plan sets guidelines for integrating the incoming workers and addressing their needs, reflecting a comprehensive approach to managing the social impacts of this exogenous development strategy. Morrow Batteries, on their side, emphasizes the municipality's concern and the affect the initiative may have on the local community, stating in our interview that:

> *"We will contribute to a greener transformation in Arendal, and create new, private jobs that can help the municipality with its challenges with living conditions and generate a better economy. We want to help create good local communities by*

building a good region with a restructured business structure that restructures from oil and gas to electric" (Representative from Morrow Batteries).

5.3.2 Technological Innovation in Agder

The Morrow Batteries has an ambitious aim to position the Southern region as a hub for technological innovation in green energy. This, by attracting external expertise, investment, and fostering collaborations with educational institutions and industry players, where Morrow Batteries aims to create a comprehensive battery production ecosystem in Southern Norway. This strategy, often referred to as the "Battery Coast," highlights the potential for regional transformation through targeted industrial initiatives. This ambition however, reflects the municipality's commitment to sustainable development but also exemplifies the strategic implementation of exogenous development strategies to drive local economic growth (Pike et al., 2017). Morrow explains in our interview that another part of their strategy is to develop and establish a battery environment, a "Battery Coast", in Southern Norway with various established actors who work with parts of battery production, such as Pixii (battery technology) and Nikkelverket (raw materials), to collaborate with local resources and create a network of local battery production. They also have a vision to establish "Eyde Material Park", meaning that several relevant actors for production will establish themselves in the area around the factory (Research Seminar, 2024). The report from Menon Economics emphasises the need for increased knowledge and education in battery production and technology, as they state that:

"*Increased recruitment through educational programs and completion of education takes a relatively long time, hence, other temporary solutions are required in the short term. The vocational school in Agder is prepared to develop continuing and further education courses that are tailored to Morrow's needs. This will be crucial to getting (Norwegian and foreign) imported labor started on the work at Morrow as quickly as possible*" (Menon Economics, 2022, p. 47).

The report from Menon Economics stresses the necessity for fostering more knowledge and expertise in battery manufacturing and technology development in the local workforce. It indicates that while recruitment through educational programs is crucial, short-term solutions

are also needed to meet immediate labor demands. According to the report, however, an important prerequisite for building up local competence for batteries is enough available and relevant labor, and they suggest that a collaboration between the county council, the municipality, education actors and Morrow Batteries should work with recruitment to relevant education from earlier educational stages, as well as ensuring sufficient apprenticeship capacity in relevant courses (Menon Economics, 2022, p. 47). The report also proposes the establishment of a business-PhD to strengthen regional collaboration between the university and local businesses, as means to leverage the already strong partnership between the vocational school in Agder, the industry, and MIL25 (Mechatronics Innovation Lab) (Menon Economics, 2022, p. 47-48).

When asked what their strategy behind acquiring external expertise and resources is, Morrow replies that they have acquired locals in South-Korea which works with the customer qualification line, where they show off products to potential customers, as South-Korea has come much further in necessary battery technology, and that this production line is now set to being transferred to the factory in Arendal in late autumn 2024 this year (Research Seminar, 2024). They also collaborate with the University of Agder Grimstad where they have created a separate research center which "*is set to become a leading hub of innovation for the battery industry in Europe. With a team of 70 highly skilled researchers from 20+ different nationalities, MRC boasts expertise that Norway has not previously possessed*" (Morrow Batteries, 2023), and they benefit from UiA's own five-year project "*to build a world-class academic hub for battery technology. UiA's researchers and educators cover most of the value chains linked to battery production, and a brand-new study program focusing on electrochemistry is being developed*" (Morrow Batteries, 2023). In addition to the collaboration with UiA, they have also rented a high-tech battery lab at the Institute for Energy Technology (IFE), just outside Oslo, where they have a team working with battery technology.

The collaboration between Morrow Batteries and various business and educational actors, as highlighted here, has helped Arendal to position itself as a potential center for innovation and development in green technology. The municipality benefits from these collaborations as the

presence of Morrow fosters a local environment of research and development in sustainable energy and battery technologies, which also increases skill development among the local employees and future workforce. This upskilling has the opportunity to increase the employability of local residents and attracts skilled workers to the area, and can also be beneficial for locals without employment as emphasised through Menon Economics (2022), arguing that; "*It can be useful to make the best possible use of the existing workforce through close cooperation with NAV. People outside the workforce can be a potential source of labor, given that they have a relevant educational background*" (Menon Economics, 2022, p. 47).

The empirical findings in this analysis, as discussed in this section, suggest that policymakers in Arendal municipality in collaboration with Morrow Batteries, adopted the dual nature of local and regional planning strategies, as they have emphasized both an indigenous and exogenous development strategy, in alignment with the national long-term and short-term battery strategy objectives (Regjeringen, 2021). The collaboration has in their joint long-term indigenous strategy, emphasized the need to cultivate and invest in local knowledge and expertise institutions, as they seek to invest in the local workforce and knowledge base as part of their long-term objective of providing the local workforce employment opportunities, as they seek to mitigate the unemployment challenges and improve the local living conditions, with the success of Morrow Batteries being considered a prerequisite (Youtube, Arendal kommune, 2021). However, the municipality together with Morrow has also stressed the need for external resources to catalyze the battery initiative, emphasizing the report from Menon Economics, which argues that while recruitment through educational programs is crucial, short-term solutions are also needed to meet immediate labor demands. This emphasis aligns with Pike et al.'s (2017) emphasis that the exogenous development strategy is particularly relevant for localities or regions that lack abundant internal/ indigenous resources to achieve their development goals, as the approach can also be understood as a government's ability to attract and utilize external resources to enable economic growth in their local and regional economies (p. 229).

The analysis reveals that the collaboration's short-term strategy has been to utilize external resources to support the Morrow Batteries initiative, as evident in their efforts to attract skilled labor from abroad and establish partnerships with international and national institutions. However, the analysis reveals that the municipality's approach reflects an

exogenous growth approach, rather than a purely exogenous development approach, as the municipality's policies and strategies reveals a stronger emphasis on broader neoliberal competitive ideologies, which places a stronger emphasis on attracting technology, labor, and capital as means to stimulate rapid economic growth and expansion, where the concern is that it often prioritizes financial gains and expansion, sometimes at the expanse of social and environmental well-being (Pike et al., 2017, p. 62). As emphasized by the business manager of the municipality:

> *"The motivation from the municipality's side was mainly the 2,500 private jobs offered by Morrow Batteries as a result of the establishment. The municipality was not fully aware of the various consequences that would arise from the investment, but has tried to adapt quickly and learn from other municipalities that have succeeded in what they are trying to do."* (Business manager of Arendal Municipality).

The analysis reveals here that the primary focus for policymakers in Arendal, has been on economic growth, job creation, influx of subcontractors, new companies, and external investments to support the factory's operations (Arendal kommune, 2021) (Morrow Batteries, 2021), sometimes at the expense of considering the local impact of such rapid growth. This is particularly evident in the looming housing crisis, where the business manager of Arendal municipality highlighted the difficulty in securing capital for housing projects, stressing the potential for a housing crisis if these needs are not met in time (Business manager of Arendal municipality). However, as revealed in the analysis, has the municipality in their approach to this growing concern, chosen to delegate this to the private actors, who also in this situation lack sufficient capital and adequate municipal zoning needed to provide these needs.

This situation highlights, in various respects, the concern that local challenges might be overlooked in favor of broader economic growth and green transition objectives. As Pike et al. argue, while exogenous development strategies can drive economic growth, they can also lead to uneven development and exacerbate social inequalities if not carefully managed (Pike et al., 2017, p. 230). As the municipality's strong emphasis on external resources and investments, in their short-term strategy reflects a neoliberal approach that prioritizes rapid economic expansion, potentially at the cost of social and environmental sustainability and equity (Pike et al., 2017, p. 62).

Chapter 6.0 Conclusion

The journey through this master thesis has illuminated various literatures related to discourse analysis and theory, socio-technical imaginaries, and exogenous development strategy, with Morrow Batteries being the case for this research. The overall objective in this research has been to delve deeper and try to illuminate how different discourses influence our social reality by shaping our understanding, perception and action. Furthermore, discourse as this thesis has illuminated helps us discuss and understand critical aspects of the other two theories, namely socio-technical imaginaries, and exogenous development strategy. As revealed in this research, is both theories both in academia but also when applied in the real world influenced by discourse.

We have in this thesis chosen to use a triangulation of methods which proved to be useful for our research, as the use of data and discourse analysis, along with semi-structured interviews and participant observation, provided us with the data and narratives needed to answer our research question. We have also focused on choosing relevant interview subjects who had knowledge, experience, and engagement with the topic of the thesis, which made it particularly engaging to complete, and that the number of interview subjects was sufficient despite a relatively small sample. This because we focused on subjects that had different relationships with the Morrow initiative. Choosing a local resident to illuminate the local experiences, the business manager of Arendal municipality to illuminate the municipality's views and opinions about the project and a representative of Morrow to also have their perspectives included. The qualitative data from semi-structured interviews gave us personal insights into the socio-technical imaginaries held by the municipality, Morrow, and local residents, which were an important part of our research, while our document and discourse analysis expanded these perspectives and narratives, providing necessary information about strategies, important theoretical perspectives, and other facts that helped us formulate an answer to our research question.

The research questions this thesis has tried to act upon is as follow:

> **How do Arendal municipality policies and commitment toward the Morrow Batteries initiative in Arendal reflect EU's discourse about the green transition,**

and how do these discourses about the green transition affect local sociotechnical imaginaries and exogeneous development strategies in Arendal?

The thesis has tried to research this question by first illuminating the evolving narrative of sustainable development, and how sustainable development discourse has evolved to only emphasize economic growth and expansion as the ideal strategy for development, to have a more holistic understanding of local and regional development efforts, emphasizing economy, society, and the environment in their concerns. By utilizing the structuralist perspective, the research highlighted how dominant discourses, particularly those advocated by the European Union, through the European Green Deal and the European Battery strategy, influence local policy frameworks.

From a discourse theory standpoint, utilizing structuralist perspectives, we may argue that the establishment of Morrow Batteries is not merely an aftermath of a series of isolated decisions and ideas made by independent actors. Instead, it can be understood to be deeply embedded within a complex interplay of linguistic, cultural, institutional, economic, ideological, and social structures (Snævarr, 2017, p. 229-230). Together, however, these structures shape the green transition discourse in local communities, by influencing production of meaning, perception, engagement, and therefore expectations of sustainable initiatives and projects, in local communities as well as the region. This is possible, as this thesis has revealed, because of the broader structure's ability to shape the green transition discourse in local communities, by influencing production of meaning, perception, engagement, and therefore local policies regarding sustainable initiatives and projects. This, one may argue, highlights how this transition is able to affect key dimensions of social structures, restructuring political, economic, sociotechnical imaginaries and social structures to align with broader narratives, as these collective commitments reflects the interconnectedness of efforts towards sustainable development discourse, and notably, EU's Green Deal strategic plan and the European Battery strategy (Norwegian Ministry of Climate and Environment, 2024) (Doe, 2024). This is evident, as we have discussed, in how policymakers that want to take part in the green transition, like Arendal municipality, are using their authority to restructure their societies, strategies and interests towards the green transition in alignment with broader EU frameworks (Regjeringen, 2021).

Emphasizing a critical lens on the implementation of exogenous development strategy in Arendal municipality, as our case Morrow reflects, has revealed challenges with this strategy, especially in the context of the green transition, and particularly in the context of renewable battery manufacturing. The municipality's focus on rapid economic growth and job creation, by emphasizing EU's techno-optimistic discourse, which promotes battery technology as one natural pathway to meet economic and environmental challenges, has also led to challenges, including an expected housing crisis but also potential social inequality. As the reliance on external resources and the prioritization of economic objectives, as the thesis has revealed, this approach has the prerequisite to overshadow the local impact of these strategies. The thesis has revealed the complex challenges that the adaptation of these strategies has on local communities and the economy, with an expected housing crisis and pressure on local infrastructure and services being some of these concerns. Because of the municipality's focus on rapid economic growth paths, to foster jobs and meet unemployment challenges in the municipality. An important aspect that this analysis has revealed, however, is that despite these challenges, local policymakers appear to be compelled to take the risk associated with adopting an exogenous growth strategy. The business manager of Arendal municipality captured this sentiment, stating that "people will look back at Arendal's history and know that they took a chance", comparing the green transition to the transition from sailing ships to steam boats 150 years ago, as he argue that the Arendal municipality, back then, missed out on the economic opportunities the transition provided, as political decision makers hesitated to take part early enough.

This highlights the complex nature of adopting exogenous strategies for local development and local policymakers, especially in the green transition, and particularly for battery development, as the nature in this industry, being new and growing fast, creates complexities for local policymakers who are trying to adopt this growing industry and transition with the approach of learning by doing, as this industry is relatively new, where we see that the local policymakers in Arendal have had to learn from other projects and municipalities as stressed by the business manager of Arendal municipality;

These concerns, however, reflects Araújo's (2022) concern that the adoption of sociotechnical ventures, such as the Morrow Batteries initiative, aims for desirable futures, rather than being planned futures, which seem predetermined by economic or technological needs (Araújo et

al., 2022, p. 4). Making it a concern about balancing the potential of economic benefits against the risk of social and environmental negative impacts.

Thus, the adaptation of exogenous development strategies in the context of the green transition in Arendal, particularly with the establishment of Morrow Batteries, illustrates both the opportunities and challenges the adaptation of exogenous growth strategies brings. As while these strategies can drive substantial economic growth and innovation, they are at the same time dependent on a holistic management approach to ensure that the benefits are equitably distributed and that the local community and their needs are not sidelined, as a result of a purely growth focused strategy. However, as the thesis reveals, policymakers seem to be compelled to take the risk of their commitment to this green transition race, as the alternative might be to lose on the economic and social opportunities this transition may provide, as emphasized by the business manager of Arendal municipality.

6.1 Recommendations for further research

We have in this research a strong emphasis on the theory of discourse, as we argue that a holistic critical understanding of discourse is of great value for policymakers, planners, researchers, and people in general. As we want to emphasize Jørgensen & Philips' (2002) view, that our access to reality is always through discourse, with the orientation that our use of discourse doesn't just reflect the world around us as it is, we also actively contribute to shape and construct our reality with discourse. Emphasizing this view, we would like to recommend further research on discourse within a power perspective. As this thesis has revealed, discourse through power influences key aspects of social organization, it shapes our technology and energy landscape, and it shapes our collective actions and visions about a more sustainable and equitable future. As by understanding the impact dominant discourses have on policy making, social organization and our energy landscapes, we might prevent pursuing influenced desirable futures, over planned futures.

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List of Figures

Attachments

Attachment 1. Intervjuguide, Business manager of Arendal municipality

1. Hvilke visjoner har kommunen for etableringen?

2. Har kommunen satt noen kriterier for å sørge for at Morrow skal forurense mindre i lokalområdet?

3. Hvordan føler du at diskurser rundt grønn omstilling har påvirket kommunens satsing på prosjektet?

4. Hvilken betydning og ringvirkninger tror dere prosjektet vil ha for kommunen?

5. Hvordan har kommunen tenkt å tilrettelegge for alle nye innbyggere som skal komme hit?

6. Er kommunen villig til å ta sjansen på å satse på et initiativ som ikke kan garantere suksess?

7. På hvilken måte har kommunen tilrettelagt for prosjektets etablering?

8. Hvilke strategier er brukt fra kommunens side for å sikre etableringens suksess?

9. Hvordan har kommunen tilrettelagt for medvirkning i forbindelse med prosjektet, og hvilke kanaler har kommunen brukt til å møte befolkningen?

10. Hvordan opplever kommunen at prosjektet har blitt møtt blant innbyggerne?

11. Har kommunen møtt på utfordringer i forbindelse med etableringen?

Attachment 2. Intervjuguide, Morrow Batteries

1. Hva var motivasjonen og drivkreftene bak etableringen av initiativet?

2. Hvordan opplever dere samspillet med kommunen og lokalsamfunnet, med tanke på motstand og støtte til initiativet?

3. Hva er strategien bak innhenting av ekstern kompetanse og ressurser?

4. Hva tror dere etableringen deres vil bety for lokalsamfunnet i tiden som kommer, både sosialt, miljømessig og økonomisk?

Attachment 3. Intervjuguide, local skeptic

1. What do you think the project will mean for the municipality and the region? What are your concerns about the project?

2. What do you hope to achieve with your articles in the newspapers about the project and the political priorities?

3. How do you perceive the discourse around the establishment to be among the local population?

4. How do you feel that the debate around climate change and green transition affects the project's establishment and people's perception of it?