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A Green Solution or a Greenwash? A Narrative Analysis of Carbon Capture and Storage (CCS) in Norway

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Abstract

This thesis investigates the green transition in Norway through a narrative analysis of Carbon Capture and Storage (CCS). The climate crisis has reached the point of no return and the message is clear, we must act now. CCS has been widely promoted as a solution to reduce greenhouse gas emissions and is included in most of the climate mitigation scenarios presented by the IPCC. Through a political ecology lens, five main narratives have been identified, labelled the ‘win-win’ narrative, the ‘maintaining our everyday life’ narrative, the ‘avoiding energy crisis’ narrative, the ‘greenwash’ narrative, and the ‘systemic change’ narrative. These narratives are related to main discourses on climate change and elaborates on the existing views on climate change in Norway. The distribution of participants within these narratives implies that there is a clear overweight of actors who believe that technological solutions, and the use of CCS, are essential to tackle climate change. There are, however, some counternarratives and critical voices in Norway but this study shows that these voices are less powerful, which again gives them a lower ability to influence policies and actions taken in Norway. Moreover, the focus on technical solution may hinder other prominent solutions such as reducing the ever-growing consumption. Ultimately, this thesis suggests a combination of these measures in line with the integrative discourse. We need to explore systemic related changes to a higher degree and especially since applying CCS seems to be more difficult than previously assumed.

Key words: Carbon Capture and Storage (CCS) – narrative analysis – political ecology – discursive power – climate mitigation actions

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1.0 Introduction

We have reached ‘code red for humanity’ and global warming is undeniably one of the biggest challenges of our time with increasing climate extremes and irreversible changes across the Earth’s climate system. Correspondingly, we need rapid, comprehensive, and sustained reductions in greenhouse gas emissions to achieve the goal of limiting global warming to 1.5°C above pre-industrial levels, as declared in the 2015 Paris Agreement (UN, 2021; IPCC, 2021). Carbon Capture and Storage (CCS) has increasingly been designated as a solution to reduce greenhouse gas emissions. Most of the modelled pathways for limiting warming to 1.5°C, presented by Intergovernmental Panel on Climate Change (IPCC), includes the use of CCS (IPCC SPM, 2022; Amer, 2022).

CCS is a mitigation action that removes CO₂ from fossil-based energy sources and industries such as cement, steel, and waste management (IPCC, 2022). Applying CCS on so-called hard-to-abate industries¹ is one of few options available to lower the CO₂ footprint (participant 2, Bellona). Moreover, the full-scale pilot project in Norway, including capture of CO₂ from the cement factory in Brevik and the waste management facility at Klemetsrud in Oslo, transport and long-time storage facilitated by Northern Lights², are supposed to be operational within a few years. The knowledge and experience related to these projects are seen as an advantage within the CCS competition (Gassnova, s.a.). However, CCS projects demands large and persistent investments which, apart from the pilot projects financed by the Norwegian state, are quite uncertain. Moreover, to be able to defend the resource use in CCS projects, actors must assume that climate measures are strengthened within the next few years. Accordingly, the political uncertainty connected to CCS may affect the expectation of profits and furthermore inhibit investments (Climate Cure, 2020).

From a more critical stand, CCS is seen as an illusion and a distraction. The CCS technology has been in use for five decades, but it is still unproven at scale. According to this critical view, the main purpose of CCS is to extend the fossil fuel era and through that prevent the transition to green and renewable energy. This makes CCS unfit for purpose, it is a false solution and a greenwash (Rowell & Stockman, 2021). Røttereng (2017) argues that the degree of CCS-

¹ Hard-to-abate industries includes categories such as cement, steel, and petrochemicals where emissions are hard to avoid (de Chamard, 2022).

² The company that facilitates transport and storage of CO₂ in Norway (Northern Lights, s.a.).

support within a country should be viewed as a strategic hunt for solutions in a two-levelled game. His findings shows that the support of CCS within a country correlates with having an interest in the petroleum industry and ambitions of climate cooperation on a global level. Such countries seek solutions that fit their national agenda and which at the same time fulfil the international climate demands to battle climate change. The methods used for reduction of emissions is then a political result of both the needs of the specific nation and international commitments.

1.1 Objective and research questions

The objective of this thesis is to assess the usefulness of CCS in Norway and identify the main narratives on CCS among political parties, environmental organisations, and CCS-related companies. Based on this objective, two research questions and one sub-research question have been formulated:

RQ1:

Are Carbon Capture and Storage (CCS) in Norway mainly viewed as a positive innovation or are there prominent critical views?

Sub-RQ 1:

What could be underlying factors contributing to the division of opinions within this topic?

RQ2:

How is discursive power exercised in relation to CCS in Norway?

1.2 Outline

This research project will be presented as follows: chapter two will introduce the background of the research topic while chapter three will extend on the theoretical framework applied to answer the research questions. Chapter four will give an overview of the methods used to conduct this study while chapter five will present the analysis of the findings. Further on, the findings are discussed in chapter six and the insights provided through this research project is presented in the conclusion in chapter seven.

2.0 Background

This chapter will present the background relevant for this research topic. It will begin by defining some central concepts before giving a short overview of the history of CCS in Norway. Furthermore, it will take a brief look at the green shift in Norway and CCS at a global scale.

2.1 Definition of mitigation

Leichenko and O'Brien (2019) defines mitigation as “an action taken to reduce greenhouse gas emissions associated with human activities in order to limit the rate and magnitude of climate change”. Promotion of renewable energy and sustainable consumption patterns are two examples of mitigation policies and practices. Other mitigation actions include energy efficiency, the transition to less carbon-intensive fuel, reduction of other greenhouse gases, improvement of biological sinks, and nuclear power (Metz et al., 2005).

2.2 Definition of Carbon Capture and Storage (CCS)

Carbon Capture and Storage (CCS) is a process that includes separation of CO₂ from industrial and energy-related sources and transportation of the CO₂ to a long-term storage location. CCS is considered to be a mitigation action because it can contribute to stabilize the concentration of greenhouse gases. CCS can be applied to large emitting sources such as fossil fuel or biomass energy facilities, hard-to-abate industries, production of natural gas and hydrogen production plants based on fossil fuel (Metz et al., 2005).

The umbrella term Carbon Dioxide Removal (CDR) includes Carbon Capture and Storage (CCS), Bioenergy with Carbon Capture- and Storage (BECCS), Carbon Capture Utilisation and Storage (CCUS), and Direct Air Capture with Storage (DACCS). This research project will focus on Carbon Capture and Storage and going further I will refer to it as CCS (IPCC SPM, 2022).

2.2 The history of CCS in Norway

CCS has been part of Norwegian climate policy since the late 1990s when the climate policy intensified after being linked to energy policy. Consequently, storage of CO₂ was seen as “an attractive political compromise solution” because CCS could enable continued use of fossil fuels and reduce CO₂ emissions. Norway has captured CO₂ from the gas produced on the Sleipner field, situated in the North Sea, since 1996. Statoil (now Equinor) implemented this

CCS project to avoid the CO₂ tax and to reduce the amount of CO₂ in the gas, in line with the market demand in EU (Tønnessen, 2021). Around 1 million tonnes of CO₂ have been captured annually since 1996 and the CO₂ captured from the gas produced on the Sleipner field is injected into the geological formation Utsira, more than 800 meters below the seabed (Norwegian Petroleum Directorate, 2020).

Moreover, the controversy related to the construction of new gas power plants was extensively debated in the late 1990s. When the company Naturkraft³ applied for a license to build three gas power plants in 1995, the debate reached new heights. In the spring of 2000, the first Bondevik⁴ government resigned after refusing to accept the parliamentary majority's desire to build gas power plants without CCS. They were replaced by the Labour Party who further on issued three licenses for new gas power plants. In the end, however, the gas power plant at Kårstø was the only one built (Gassnova, s.a).

From 2001 onwards there was a focus on how research and development could be used to stimulate the use of environmentally friendly gas in Norway, and also if this could be used as a source of energy to a higher degree. In the following years, the work with CCS increased and the political platform from 2005, the 'Soria Moria declaration', stated that the Government would ensure the commissioning of a full-scale CO₂ removal facility on the gas power plant at Kårstø. In addition, the government also wanted to establish a carbon transportation and storage value chain (Gassnova, s.a).

2.2.1 “The Norwegian moon landing”

In 2006, Statoil (now Equinor), received an emission permit for a new combined heat and power plant at Mongstad, and according to the 'Soria Moria declaration', new gas production licences had to be based on removal of CO₂. The Government suggested to establish a public enterprise subject to the Ministry of Petroleum and Energy that could manage the state's engagements in CCS projects. The public enterprise Gassnova was consequently established in 2005, based on a political desire to “increase domestic use of gas while also taking Norway's energy situation, environmental considerations and value creation into account”. Gassnova were responsible for

³ Naturkraft AS is a Norwegian energy company established in 1994 by Norsk Hydro, Statoil (now Equinor) and Statkraft for the purpose of building gas power plants in Norway (Rosvold & Hofstad, 2019).

⁴ Kjell Magne Bondevik. Former leader of the Christian Democratic Party and prime minister in two periods from 1997 to 2000 and from 2001 to 2005 (the parliament, s.a.)

managing the state's interests in the work with the planned test centre for CO₂ capture on Mongstad, as well as working with full-scale CO₂ capture on Kårstø and transportation and storage of CO₂. In 2009, however, the government decided to stop the procurement process for allocating a contract for the CO₂ capture facility at Kårstø, as the operation would be abruptly for longer periods of time. The CO₂ capture project on Kårstø was eventually terminated in 2010 (Gassnova, s.a).

The planning process for a full-scale CO₂ project on Mongstad begun in 2009, but an overambitious time schedule and uncertainties around health-related consequences resulted in several delays. Simultaneously, the test centre for CO₂ capture, the biggest of its kind, was finished on Mongstad in 2012. This was celebrated by the CCS community as a big achievement and a milestone in the development of the CO₂ capture technology. However, uncertainties and risks related to the future of the full-scale CO₂ project on Mongstad made it difficult and irresponsible to continue the project and it was eventually terminated by the Stoltenberg⁵ government in 2013 (Gassnova, s.a). The project was supposed to be “the Norwegian moon landing” but ended up as “the ugliest political crash landing we have ever seen”, according to the leader of the Bellona Foundation, Frederic Hauge. It was estimated that around 10 billion NOK was used on the CO₂ projects on Kårstø and Mongstad from 2007 to 2012 (Aftenposten, 2014). Over the years, the focus has shifted towards using CCS on hard-to-abate industries such as cement production and waste management (Tønnessen, 2021).

2.2.2 The full-scale CCS project Longship

The non-socialist parties won the election in 2013⁶ and the main goal of the government's new CO₂ strategy, presented in 2014, was to identify measures that could contribute to technology development and cost reductions, as well as realising at least one full-scale CO₂ capture facility before 2020. In the following years, various studies were carried out to investigate whether a full-scale CO₂ operation chain, including capture, transportation, and storage, could be feasible. A study conducted by the Ministry of Petroleum and Energy in 2016, stated that there were three technical achievable options; Norcem cement factory in Brevik, Yara ammoniac factory in Porsgrunn and Klemetsrud waste management in Oslo. Simultaneously, Statoil (now

⁵ Jens Stoltenberg. Former leader of the Labour Party and prime minister from 2000 to 2001 and in two periods from 2005 to 2013 (the parliament, s.a.).

⁶ The Conservative Party and the Progress Party secured parliamentary majority through a cooperation agreement with the Liberal Party and the Christian Democratic Party (Gassnova, s.a).

Equinor) investigated the possibility for CO₂-storage at three different locations on the Norwegian continental shelf (Gassnova, s.a).

Two years later, in 2018, it was decided that Klemetsrud waste management (owned by Fortum Oslo Heat at the time and by Hafslund Oslo Celsio today) and Norcem (now Heidelberg Materials) could implement preliminary projections. Accordingly, two out of the three planned projects continued in the process as Yara abandoned their CCS-plans in favor of electrification. Furthermore, Equinor, Shell and Total, that formed a partnership in 2017 named Northern Lights⁷, did also implement preliminary projections in relation to transportation and storage of CO₂ in 2018. The preliminary reports were delivered in late 2019 and early 2020. In September 2020, the government launched their full-scale CCS project named Longship, and it was approved by the Parliament in 2021 (Gassnova, s.a). The main purpose of the project is to demonstrate that the CCS technology can be used throughout the value chain. First, the CO₂ is captured from an industrial site and then shipped by boat to a temporary storage site at a dock. Finally, the CO₂ is transported through pipes to the injection site offshore (The Norwegian Environment Agency, 2020).

During the Longship process, however, Fortum Oslo Heat (now Hafslund Oslo Celsio) ended up being only partially financed by the government and had to find external investors to be able to move forward with their CCS project. They applied EUs innovation fund for support, but the competition was hard. Eventually, new owners together with the Norwegian state and Oslo municipality, made the CCS project possible. The construction work begun in August 2022 (Hafslund Oslo Celsio, s.a.). The carbon capture facility at Heidelberg Materials cement Norway was integrated into the current cement plant in Brevik by the beginning of 2023. They will start testing and commissioning from mid-2023 and are planning to be fully operational within 2024 (Brevik CCS, s.a.).

2.3 The green shift in Norway

There is a growing emphasis on the idea of green transitions on multiple governing levels. Concepts such as green transitions within energy, mobility, consumption, and cities can be included in this umbrella term. Measurable techno-managerial and behavioral solutions are often preferred in green transitions strategies, commonly with the objective of meeting specific

⁷ The transport and storage component of the “Longship” project (Northern Lights, s.a.).

targets and goals. According to the authors, “going green” can be an effective marketing tool as well as a response to civil society action. Consequently, the “going green”-branding can be both symbolic and substantive. Sustainable development as a concept was first popularized through the Brundtland Commission Report “Our Common Future”, published in 1987. Today, transformation to sustainability is often promoted through green transitions, but climate activists have also pointed at tensions between development-as-usual, equity and sustainability, emphasising the need for just transitions (Leichenko & O’Brien, 2019).

According to the government, the green transition in Norway, often referred to as the green shift, implies a transition to a low-emitting country status within 2050 where growth and development must happen within the boundaries of nature. Cutting emissions in line with the Paris Agreement requires transformation throughout all levels of society and innovation and technology development are seen as crucial elements (The Government, 2021). Both the Norwegian climate law, the Climate Cure report, and the establishment of the Energy commission can be seen as actions taken towards the green shift.

2.3.1 The Norwegian climate law

The Norwegian climate law was passed on the 16th of June 2017. The purpose of the law is to promote implementation of the goals of the Paris Agreement by cutting emissions by 40% within 2030 and becoming a low-emittance country within 2050. Furthermore, it promotes transparency and public debate on status and progress towards reaching these goals. Moreover, the law shall not prevent climate targets from being implemented in cooperation with the EU. The government is also obliged to present updated climate targets to the Parliament every five years from 2020 and account for the progress. They must also clarify how choices made in the state budget could affect the climate (The climate law, 2017).

2.3.2 The Climate Cure report

The Climate Cure report investigates various climate measures to cut emissions, that are not subject to quotas, by 50% within 2030. The report does also look at barriers and possible means of action to initiate the suggested measures. The report was ordered by the government, through the departments, and produced by a working group led by the Norwegian Environment Agency. The request was connected to the cooperation agreement between Norway and EU on reaching the emission target. As a result of this agreement, Norway will receive emission budgets

annually between 2021 and 2030. The report was published in 2020 and concludes with the need for both short- and long-term solutions on a national as well as a global level (The Norwegian Environment Agency, 2020).

The report looked at opportunities and barriers related to CCS in Norway, based on waste management facilities in Oslo (Klemetsrud), Bergen (BIR), and in Trondheim (Heimdal). Waste management facilities are among the biggest emitting sources within emissions not subject to quotas. These facilities are burning waste based on both fossil fuels and organic materials. Burning fossil fuel-based waste with CCS, results in reduced emissions. Burning waste from organic material, however, so called bio-CO₂, results in negative emissions when CCS is applied. Negative emissions implies that CO₂ that otherwise would be released into the atmosphere naturally, through the decomposition of biological sources such as trees, are being captured and stored. According to the report, implementing CCS on all three facilities will reduce emissions by 0,8 billion ton of CO₂ equivalents annually. The lack of incentives for investment, lack of business models, and poorly adapted regulations are considered to be barriers for CCS in Norway (The Norwegian Environment Agency, 2020).

Figure 1 portrays the 60 climate measures considered in the Climate Cure report. The measures are distributed by cost within three columns and each sector is represented by colours. The size of the circle correlates with the potential of emission reduction. CCS is placed in the second column which represent measures ranging from 500 to 1500 NOK per ton of CO₂. Accordingly, CCS is an expensive mitigation measure, but it is still not among the costliest options. Moreover, the size of the circle suggests a high degree of potential emission reduction (The Norwegian Environment Agency, 2020).

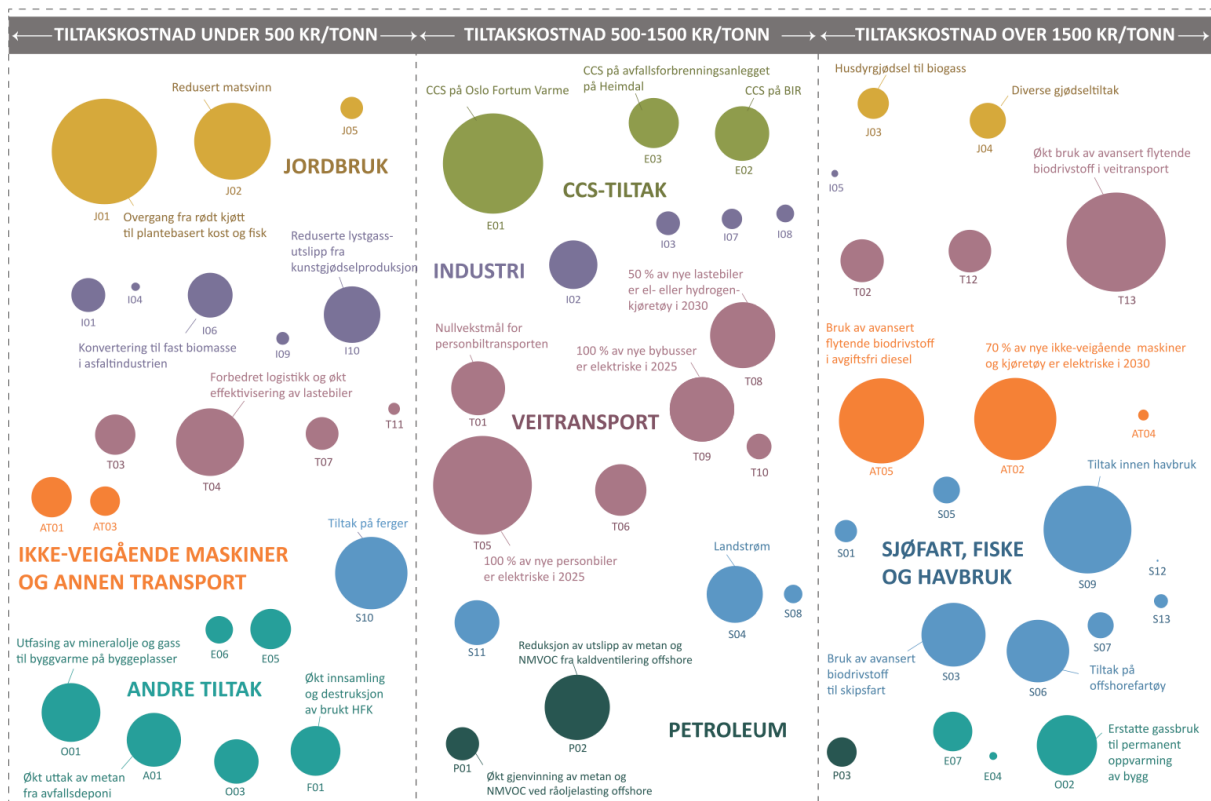


Figure 1: Climate measures distributed by cost (The Norwegian Environment Agency, 2020)

2.3.3 The Energy commission

The Energy commission was established in 2022 with the purpose of mapping the energy needs in Norway and promoting increased energy production. Moreover, the goal set out is that Norway continues to have surplus production of power and that high access to renewable energy continues to be a competitive advantage for Norwegian industry. The name of the report is accordingly “More of everything – faster”. In relation to the current energy crisis, chapter 3 is focusing on the war in Europe and the energy crises that followed (Sørgard et al., 2023). The report presents the measures they see as needed to supply energy in the future. However, CCS as an option is barely mentioned. Under the sub-chapter ‘other technologies’ they stated:

“There are several technologies that can produce electricity either renewable or without emissions. It is also possible to build new fossil power plants, or thermal power plants that are fired with bioenergy (using bioenergy as fuel). In both cases, the CO₂ emissions can be captured and stored. Wave power, geothermal energy and high-altitude wind are also technologies that are often mentioned as promising. What these technologies have in common is that there are no readily available cost figures because they are not widespread and/or still in a development

phase (...) Nevertheless, technology development continues, and nothing should be ruled out” (Sørgard et al., 2023, p. 103-104).

2.4 CCS on a global scale

Climate change is affecting every region across the globe and has adverse impacts on food and water security, human health, societies, economies, and nature. Without serious mitigation and adaptation efforts, climate change could push millions of people further into poverty. Furthermore, vulnerable communities who have historically contributed the least to climate change are already the ones that are affected the most. Climate mitigation is necessary to secure a safe climate where development and well-being can be pursued and sustained (IPCC, 2023; IPCC, 2022). Consequently, this makes climate mitigation measures a global concern. International climate agreements, rising national ambitions on climate action, and public awareness increases efforts to address climate change, but although the development is moving in the right direction, current mitigation and adaptation actions and policies are not sufficient. There is still a gap between global and national ambitions and national ambitions and current implementations (IPCC, 2023).

According to the Norwegian government, the green transition must be a global process to succeed. However, it is emphasized that Norway has to find its own strategies and solutions within this process (the Government, 2021). Apart from reducing greenhouse gas emissions, knowledge sharing is a central aspect within the Norwegian CCS projects. Furthermore, the opportunity of exporting leading CCS solutions to other countries, is also highly emphasized (Gassnova, s.a.). A prominent question, however, is whether the desire to tackle global warming, or commercial interests is the main driver. At the same time, rapid and large-scale economic development, which have driven climate change in the past through dependence on fossil fuels for instance, is seen as a critical factor to improve global well-being. Moreover, this is also crucial to lift millions of people, especially in low- and middle- income countries, out of poverty (IPCC, 2022).

Achieving the goal of the Paris Agreement of limiting warming to 1.5°C or at least 2°C may result in ‘stranding’ of carbon-intensive assets which in a slightly different way promotes the aspect of justice through just transitions. Stranded assets can be defined as “assets which suffer from unanticipated or premature write-offs, downward revaluations or conversion to liabilities”. Climate policies, regulations, changes in fuel prices, and innovation in competing

technologies could for example lead to stranded assets. Moreover, stranded assets would result in loss of wealth which again would create instability in the financial market. This, and reduced tax income for hydrocarbon-dependent economies, could again affect macroeconomic stability and the opportunities for a just transition. This implies that countries, businesses, and individuals could lose wealth due to stranded assets which again could result in a desire to keep assets in operation although financial or environmental concerns call for retirement. Moreover, asset owners might hinder climate policy reform to keep their wealth. According to the Intergovernmental Panel on Climate Change, communicating risks and imposing and enforcing sustainability reporting would make it easier to retire such assets (IPCC, 2022).

3.0 Theoretical framework

This chapter presents the theoretical framework applied in this research project in order to identify and analyse narratives on CCS in Norway and examining the aspect of discursive power within these narratives. Furthermore, five central aspects have been identified. I will begin by giving a brief overview of political ecology as an overarching field. Going further I will elaborate on degrowth, climate justice, and eco-modernism as these aspects are relevant for the main narratives on CCS in Norway. Ultimately, I will look into the field of discursive power.

3.1 Political ecology

The overarching framework applied in this thesis is political ecology. Political ecology emerged as a field of study in the USA and the UK in the 1970s and 80s from various theoretical influences such as Marxist political economy, human and cultural ecology, poststructuralism, peasant studies, and critical theory. Political ecology is for the most part dominated by social sciences, but it is also connected to the natural sciences. However, the ecology aspect in political ecology is indirectly built on human and cultural ecology, situated within social science, where social groups are studied as part of ecosystems. The study of local situations in the light of national and global influences is central within this field. Moreover, political ecology provides a critical alternative to other ways of studying environmental issues because it investigates power relations and question mainstream and established claims about environment and development. The three main perspectives on power within the field of political ecology are identified as actor-oriented power theories and two types of structure-oriented theories referred to as neo-Marxist power perspectives and poststructuralist power perspectives (Benjaminsen & Svarstad, 2021).

Benjaminsen & Svarstad (2021) emphasize the importance of combining all three power perspectives within political ecology to be able to understand power in specific cases. However, within the chosen framework of this thesis I will mainly use poststructuralist power perspectives, and more specifically discursive power, as this field of power is most relevant in relation to a narrative analysis. It may also be relevant to look at the actor-oriented power perspective in connection to discursive power as people seldom act as passive victims within the mechanisms of discourses. Moreover, people tend to act in accordance with the possibilities provided by a discourse (Stern et al., 2015 referred to in Benjaminsen & Svarstad, 2021).

To understand the scientific roots of political ecology it is useful to mention the theoretical divide between ‘realism’ and ‘constructivism’ within science, which are two main epistemologies that are often seen as representing two different incompatible approaches. Realism can be understood as the ability to describe reality in an objective manner without influence from personal norms and values. This approach is common within the natural sciences and in quantitative, or positivist, forms of social science. Constructivism, on the other hand, emphasizes that thoughts and observations construct our understanding of the world. Accordingly, the world consists of multiple parallel views of reality, and within more sterling versions of constructivism all views are considered to be equally valid. Correspondingly, research that are based on realism look at natural or social phenomena while research rooted in constructivism focus on different views and claims about these phenomena (Benjaminsen & Svarstad, 2021).

Studies within political ecology often combine realism and constructivism through linking empirical investigations and social constructions of a phenomenon. As a result of this position between the two theories, political ecology is referred to as ‘critical realism’ (Forsyth, 2003) or ‘soft constructionism’ (Robbins, 2020a), as it is accepted that different social constructions influence how reality is presented in our society. However, these constructions are not understood as being equally correct. It would then be more precise to say that within political ecology, claims about reality becomes the subject of empirical investigations. Scholars within political ecology, that holds this middle-position as critical realists or soft constructionists, investigate how social and environmental practices are characterized by powerful actors. Furthermore, a central aspect is also to investigate debates about environmental change and distinguish between what is true and what is false (Benjaminsen & Svarstad, 2021).

Initially, political ecology was mostly focusing on people and environments in rural areas of the Global South. Throughout recent decades, however, political ecological studies have also included a focus towards the North (Benjaminsen & Svarstad, 2021). Benjaminsen & Svarstad (2021) emphasize the importance of political ecological case studies, conducted in both the Global North and the Global South, as places in various parts of the world are interconnected and influenced by powerful actors of both the North and the South. The aim of this thesis is to identify the existing narratives on CCS in Norway, which is a case study situated in the Global North. However, since the entire human population is affected by climate change, this crisis

and climate mitigation actions, are a highly global concern. Furthermore, it is well known that the people that have contributed the least to the current climate situation are the ones that are affected the most (IPCC, 2022, full report), and the mitigation choices made here will accordingly affect people situated outside the geographical borders of Norway. Moreover, this research project could benefit from using aspects from a political ecological case study to investigate some of these linkages.

3.1.1 Political ecology as a theoretical framework?

According to Robbins (2020a), there are multiple definitions of political ecology where some emphasize political economy and others focus on more formal political institutions. Moreover, some definitions stress environmental change, while others look at the narratives that constitute this environmental change. The link between the various definitions, however, is that “political ecology represents an explicit alternative to “apolitical” ecology, that it works from a common set of assumptions, and that it employs a reasonably consistent mode of explanations”. However, the discussion on whether political ecology is a body of theory or not, is contested.

Throughout the years, political ecology has become a far-reaching theoretical field and according to Robbins (2020a, p. 84) “this enormous empirical and theoretical heterogeneity challenges the unity of the enterprise in total”. Others have expressed that it is easier to ascertain what political ecology is rather than what it is not, because of the broad inclusion of topics (Blaikie, 2008). However, Robbins (2020a) states that despite this diversity, common conceptual tools and processes are being used when central topics within political ecology are being studied. Moreover, political ecology could be viewed as a body of theory or as a field that apply concepts from various schools of thoughts. According to the author, however, political ecology “utilizes and supports theory-building to an enormous degree, but it would be grossly misleading to call it a body of theory” (Robbins, 2020a, p. 84). Moreover, political ecology is a community of practice rather than a theory or a method (Robbins, 2020a).

Another criticism of the field is that political ecology has pointed out problematic aspects through critical studies but has to a lesser degree suggested wanted outcomes or possible solutions. Accordingly, the political influence within political ecology is often seen as modest and lower than the political influence within apolitical ecology (Benjaminsen & Svarstad, 2021). The two dominant approaches in global environmental discussions that are considered apolitical are “ecoscarcity” and “modernization” accounts, which both are connected to

Malthus' population theory that focus on how increased population growth will result in human and environmental catastrophe (Robbins, 2020a). Furthermore, Robbins (2020a, p. 97) refers to the term 'the hatched and the seed' within political ecology because the field "aggressively dismantles other accounts (wielding its intellectual hatchet), while making space for, and nurturing other possibilities (planting intellectual and practical seeds)". Others have furthermore argued that political ecology has a lot to offer, but that the potential is underutilized. There should, moreover, be more focus on the 'seed' within political ecology (Walker, 2006).

I will, however, use political ecology as an overreaching approach throughout this thesis. I would argue that political ecology suits my purpose of identifying narratives on CCS in Norway and to investigate the aspect of power within these narratives. Moreover, both these analytical tools are central within political ecology. I will, more specifically, connect degrowth, environmental justice and climate justice, ecomodernism, and discursive power to the narratives on CCS in Norway. Discursive power is, as already mentioned, one of the main power theories within political ecology and degrowth, environmental justice and climate justice, and ecomodernism are movements and fields of study that are connected to political ecology (Robbins, 2020).

3.2 Degrowth

The Degrowth movement emerged in France in the 1970s and is closely connected to the southern European version of political ecology. This version of political ecology emerged concurrently with the Anglophone version introduced earlier in this chapter but differs from that one in having a closer link to activism and socio-environmental transformation (Benjaminsen & Svarstad, 2021). Kallis (2018, p. 10) defines sustainable degrowth as "an equitable downscaling of production and consumption that increases human well-being and enhances environmental conditions". As a response to the de-politicizing discourse of "sustainable development", the author calls for sustainable degrowth. Moreover, he notes that sustainable degrowth is not comparable to economic recession or depression as such processes are involuntary and happen within a system driven by growth. Sustainable degrowth, however, can be understood as an international process of a "smooth and prosperous way down" (Kallis, 2018, p. 12). Throughout this process of downscaling, human welfare will increase and be more equally distributed.

The reality of global climate change and other severe environmental changes have propelled the degrowth movement where “doing less, making less, and consuming less” is seen as the right path towards a sustainability transition (Robbins, 2020a, p. 239). This builds on the reasoning that capitalist accumulation acquires continuous growth, and that the drive for growth is the cause of the current environmental crises. Correspondingly, the field of degrowth stresses natural limits, and equity which, in practical terms, can include cooperatives, community currencies, barter, and shared labour. The scepticism towards technology, and especially technology at scale, is also typical within degrowth as it undermines the principle of autonomy. Smaller systems, such as localized management, are seen as the key to freedom and conviviality. Based on these descriptions, Robbins (2020a) connects degrowth to the phrase ‘less is more’.

Moreover, Robbins (2020a) states that degrowth, as a perspective on an alternative future, is compatible with political ecology in many ways. To substantiate this connection, he argues that:

“... political ecological narratives tend to reveal the way capitalist accumulative strategies tax social relations and natural systems. Moreover, efforts in development and conservation have been shown to repeatedly dismantle adaptive, cooperative, local, rational, humane, and sustainable socio-natural institutions, including most forms of common property institutions. Degrowth, it would seem, is a future that is compatible with political ecology” (Robbins, 2020a, p. 239-240).

However, in other ways, there are some distinctions between the two fields. Political ecology has criticized the aspect of natural limits through numerous studies focusing on how scarcity is a construct that is connected to elite power and not liberating processes. Liberating processes, moreover, should focus on bringing more to a broader amount of people and not less, as the degrowth movement promotes. Accordingly, this creates a dissonance in relation to the rejection of ‘limits’ within political ecology (Robbins, 2020a). The southern European version of political ecology has, correspondingly, generally not been as critical to Malthusianism as the Anglophone version of political ecology has been. In short, Malthusianism refers to the ideas on population growth brought about by Thomas Robert Malthus in the late 18th century. Malthus stated that the population growth of the poor would pressure natural resources, and more specifically global food production, and eventually result in widespread hunger and poverty (Benjaminson & Svarstad, 2021; Malthus, 1798). When the human population grows

beyond the capacity of the environmental system, this would also affect the nature “whose overused assets are driven past the point of self-renewal” (Robbins, 2020a, p. 11).

As a response to this interpretation of degrowth, Kallis (2018) rejects that the understanding of limits within degrowth is connected to the Malthusian perception of limits. According to him, limits is the object of political choice rather than a distinction that is imposed on people. Furthermore, the personal choice of limiting production and consumption, referred to as self-limitation, is based on the desire to pass on a better and healthier environment to future generations. Moreover, the limits suggested within degrowth are often understood as collective decisions, such as deciding an upper limit for carbon emissions. The requirement for governing directly without interference from technocratic elites, is social systems of limited size and complexity. Furthermore, he states that:

“Fossil fuels and nuclear power are dangerous not only because they pollute, but also because an energy-intensive society based on increasingly sophisticated technological systems managed by bureaucrats and technocrats will grow less democratic and egalitarian over time. Many degrowth advocates, therefore, oppose even “green” megastructures like high-speed trains or industrial-scale wind farms” (Kallis, 2018, p. 21).

Phillips (2015, referred to in Robbins, 2020b, p. 3) express his scepticism towards austerity thinking such as degrowth which, according to him, “may require action at a far greater scale than the slow energy transition has mustered to date”. Moreover, he states that the field of degrowth is improper to tackle climate change. Most people are interested in improving the quality of their lives, which requires technology savvy as well as increased and efficient production. Robbins (2020b, p. 3) emphasize this statement “given that roughly 600 million people in Africa currently live without electricity”. In addition, he states that empirical studies have shown that modern technology and institutions do not always lead to societal collapse and loss of indigenous knowledge and identity. Phillips (2015, referred to in Robbins, 2020b, p. 3) views, or at least some of them, could therefore be understood in the context of eco-modernism which I will return to later.

3.3 Climate justice

It would be relevant to look at climate justice in relation to degrowth as this aspect is commonly used as an argument against the use of CCS and other big scale, costly mitigation options

(Kallis, 2018). Moreover, environmental justice has influenced the conceptualisation of climate justice and I will therefore start with a brief overview of environmental justice before moving on to climate justice. Environmental justice emerged in the form of civil rights struggles in the USA in the 1970s and the 1980s. The movement protested against dumping of hazardous waste which, within this field, is seen in connection with issues such as class and race. Moreover, scholars within environmental justice have provided multiple studies on this specific topic. Environmental justice and political ecology are seen as two related scholarly fields as they both carry out critical studies of environmental interventions. However, environmental justice has closer bonds to activism for social justice than to political ecology (Benjaminsen & Svarstad, 2021).

Scholars within the field of environmental justice started to expand their work geographically from the early 21st century which further on led to a critique of the field (Benjaminsen & Svarstad, 2021). Vermeulen (2019) questions the ability to value other ontologies and epistemologies within environmental justice when the field is rooted in worldviews and knowledge produced in the Global North. Moreover, she claims that environmental justice can be understood as a universalist approach that reproduces misrecognition, and she compares the exclusion of worldviews and knowledge from the Global South to an act of epistemic violence. Ultimately, Vermeulen (2019, p. 90) argues that “environmental justice requires a more upfront confrontation with the socio historical causes of oppression brought about by coloniality” as coloniality still persist though Eurocentric modernity discourses and practices. These statements contribute to the growing field of global and critical environmental justice.

Álvarez & Coolsaet (2018) have also criticized the field of environmental justice for tending to transfer western concepts and frameworks to the Global South. This could lead to ineffectiveness and more severe consequences such as producing injustice in multiple forms that might be way worse than the initial conflict. Accordingly, the authors call for decolonization of environmental justice. The dominate approach within environmental justice today is called radical environmental justice approach. This approach is focusing on the multidimensional aspect of justice through distributive justice, justice as recognition, procedural justice, and capability theory (Benjaminsen & Svarstad, 2021).

Climate justice discussions, similar to those in the environmental justice movement, not only focus on ideal principles but also recognize the construction of injustice. The lack of

acknowledgement of marginalized communities such as people of colour and indigenous populations, and the interconnection between environmental factors and everyday life are critical considerations in the climate justice movement. Moreover, climate justice has a wide-ranging and pluralistic conception of justice that concentrates on comprehending and resolving the issue, rather than construction a perfect model (Schlosberg, 2013).

3.4 Eco-modernism

Eco-modernism is a common point of departure within Norwegian climate policy and is therefore relevant to include in the theoretical framework of this research project (The Government, 2021). A central idea within eco-modernism is that “progress can steadily diminish the impact of people of the Earth rather than increasing it” (Robbins, 2020a, p. 240). Moreover, the authors of ‘An Eco Modernist Manifesto’ states that:

“As scholars, scientist, campaigners, and citizens, we write with the conviction that knowledge and technology, applied with wisdom, might allow for a good or even great, Anthropocene. A good Anthropocene demands that humans use their growing social, economic, and technical powers to make life better for people, stabilize the climate, and protect the natural world” (Asafu-Adjaye et al., 2015, p. 6).

Furthermore, various names are used to describe this field, such as modernist eco-socialism (Benjaminsen & Svarstad, 2021; Robbins, 2020a), socialist modernism (Robbins, 2020b), and eco-modernism (Kallis, 2018; Gómez-Baggethun, 2020). It is, however, important to distinguish between the socialist versions of modernism, which is related to political ecology, and eco-modernism. Social modernism emphasizes some of the views within eco-modernism, but additionally the field of socialist modernism suggests a shift towards an anti-capitalist form of modernism that aims to use the tools and resources of the economy to empower workers and repair the environmental damage caused by human activity. Social modernism does also include large-scale planning as well as widely distributed advanced industrial solutions to address global issues (Robbins, 2020b).

The Anthropocene refers to the current geologic epoch, which is characterized by human influence on Earth-system processes (Leichenko & O’Brien, 2019). Furthermore, through this statement, the authors point out that they affirm the need to decrease human impact on the environment, but they reject that “human societies must harmonize with nature to avoid

economic and ecological collapse” (Asafu-Adjaye et al., 2015, p. 6). Moreover, escalating human activities such as farming, forestry, extraction of energy, and settlement is crucial to decouple human development from environmental impacts. Decoupling refers to a process where the economy continues to grow while the environmental impacts declines. Initially, the environmental impacts are thought to increase, or peak, before they start to decline. This is also known as absolute decoupling. Another form of decoupling, referred to as relative decoupling, implies that the economic growth is higher than the rise in overall environmental impacts. A result may be, however, that the overall environmental impacts increase, but it would happen at a slower rate than it otherwise would. Furthermore, decoupling is often a result of both technological and demographic trends (Asafu-Adjaye et al., 2015). Moreover, a central aspect within eco-modernism is to combine economic modernization and environmental protection, and together “they allow people to mitigate climate change, to spare nature, and to alleviate global poverty” (Asafu-Adjaye et al., 2015, p. 6).

According to Kallis (2018, p. 48), which is a degrowth supporter, eco-modernism can be seen as “political ecology gone wrong”. Eco-modernism is based on premises familiar to political ecologists, such as “we are part of nature and we constantly transform it”. However, the call for “nuclear power, genetically modified agriculture and climate geo-engineering” in the name of preserving wilderness, is hopefully not familiar to political ecology, according to the author. Moreover, referring to ‘An Eco Modernist Manifesto’ (Asafu-Adjaye et al., 2015), Kallis (2018) states that removing the ‘eco’ in the title would leave the manifesto as a pure call for modernization. Moreover, he argues:

“To justify the “eco” in the title, the manifesto preforms theoretical acrobatics, arguing that somehow a more intense use of technology will liberate space and resources from preserving wilderness. This is not only factually wrong. It is also inconsistent with the overall premise of the manifesto that there is no wild nature out there independent of us” (Kallis, 2018, p. 49).

Gómez-Baggethun (2020), another degrowth supporter, has also criticized eco-modernism and argues that the technological utopia of modernism is just reinforcing the status quo and promoting false solutions to tackle climate change. This point of view can, furthermore, be understood as ‘green growth’ which, according to the author, is the main response to climate change advocated by the European Union, United Nations, and the World Bank, among others. According to Kallis (2018), green growth encompasses the vision where capitalist economies

can continue to grow by switching to renewable energy and organic farming, reduce pollution and replace fossil-based industries. Furthermore, efficiency through improved technology is seen as a key component. According to the author, however, green growth is an illusion because efficiency gains is often reinvested into future growth, resulting in a “rebound effect”. An example of this is that we spend the money saved from energy efficiency on traveling further away for our holidays. In other words, “less consumption rebounding to more consumption eventually” (Kallis, 2018, p. 15). He is also referring to the economist Stanley Jevons and his writings from the 19th century. Jevons noted that improvements in technological efficiency increased the use of coal, rather than decreasing it. Moreover, efficiency leads to cheaper resources, which again increases demand, and to make use of these affordable resources, new technology emerge. Accordingly, staying within a growth economy, implies that efficiency and conservation leads to further growth (Kallis, 2018).

Robbins (2020b) states that both degrowth and socialist modernism have a future that is compatible with political ecology. Moreover, he argues that degrowth and the idea of limits can be seen as a dystopia⁸. Socialist modernism, on the other hand, portrays a utopia⁹ that “cause us to forget rather than act” (Mieville, 2015 referred to in Robbins, 2020b). However, labeling degrowth as ‘less is more’ and socialist modernism as ‘more is less’, he concludes with the phrase ‘neither more nor less’. Robbins (2020b, p. 1) states that “socialist modernism and degrowth sprouted from the same seed, share a political ecological tradition, and may indeed require one another”. Correspondingly, opting for a middle-path, neither utopian or dystopian aspirations, may lead to “progressive reconciliation and action”. As a response to Robbins article, Gómez-Baggethun (2020, p. 5) argues that “against the modernist claim that more is less, evidence suggests that more is more”. Moreover, he states that political ecology can gain from engaging with the political utopia of degrowth, than opposed to the technological utopia of modernism. He claims that “degrowth is utopian in the sense it aims for radical change, but it is not utopian in the sense of pursuing an impossible future” (Gómez-Baggethun, 2020, p. 5). Benjaminsen & Svarstad (2021, p. 52) has also commented on the positioning within political ecology:

⁸ A fictional depiction of a society where evil forces has prevailed, for example through dictatorship, crime, or environmental collapse (Hamm, 2018).

⁹ An ideal society or a society an individual or a group long for or tries to realize. The term utopia is often used to describe unrealistic ideas (Thorsen, 2021).

“With the growing threat and urgency of climate change, political ecology becomes increasingly torn between on the one hand deconstructions of claims and narratives of degradation, limits and scarcity emerging from environmental science and on the other hand contributing to alternative sustainabilities within the operating space of planetary boundaries”.

3.5 Discursive power

Discursive power is connected to poststructuralism, which emerged in France in the 1960s. Poststructuralism is a development of structuralism and Michel Foucault has been the most influential poststructuralist thinker within political ecology. Both structuralism and poststructuralism focus on language and argues that people create language and, simultaneously, are created by language (Benjaminsen & Svarstad, 2021). Svarstad et al. (2018) identifies discursive power, governmentality, and biopower as three different poststructuralist power perspectives, but as already mentioned, this research project will focus on discursive power. The authors define discourse as “a socially shared perspective on a topic” Svarstad et al. (2018, p. 356). Discursive power is then defined as a process where actors such as corporations, government agencies or NGOs produce discourses and get other groups to adopt and contribute to their discourse-reproduction. Furthermore, a discourse analysis within political ecology implies a comparison of claims and assumptions within discourses and empirical data on the environmental processes subject to these claims and assumptions. Moreover, “the prolific ecology literature on discursive power consists of discourse and narrative analysis, and shows how some actors exercise power through the establishment of discourses on issues and narratives of specific cases in ways that are suitable to themselves” (Svarstad et al., 2018, p. 356).

Actor-oriented power perspectives, one of the other central power perspectives within political ecology, is connected to discursive power as people rarely act as passive victims within the mechanisms of discourses. Moreover, people tend to act in accordance with the possibilities provided by a discourse (Stern et al., 2015 referred to in Svarstad & Benjaminsen, 2021). Accordingly, Foucault has been criticized for insufficient focus on actors as “discourses are structures that are produced, reproduces and changes by actors” (Fox, 1998; Svarstad & Benjaminsen, 2021). Based on this, it is necessary to define actor-oriented power perspectives where the view of power as something that is exercised by actors, is the main understanding. Fredrik Engelstad has argued that the combination of intentionality, relationality and causality defines a strong power concept. Intentionality refers to the idea of power being exercised by

actors that use certain actions or means to achieve their intentions. Relationality implies that these actions are happening between two or more actors, and causality means that the outcome of these actions leads to an intended result. However, the outcome is often a result of multiple actors exercising power rather than by one actor alone (Svarstad et al., 2018).

There are, however, other perspectives connected to discursive power besides those of Foucault with a more agency directed focus. One example is Lukes' (2005) "third power dimension" which, according to the authors, deals with discursive power. Moreover, one actor influence other actors wishes and gets them to do things they otherwise would not do. This could take form as a government that dominates the information through media and education, leaving only certain cases and issues available for the public. Accordingly, the government is not forcing people to act in a certain manner but chooses to do it themselves based on the information available (Svarstad et al., 2018). Furthermore, Edward Said and his book 'Orientalism' (Said, 1978) has also inspired political ecology. He identified a discourse produced in the West regarding the inferior 'others' in 'the Orient', which got the name Orientalism. For instance, Western media, art, and academia have reproduced this discourse for decades, which again has contributed to the justification of Western domination and colonialism. Accordingly, the Western cultural expressions do not portray the reality in the 'Orient', it reflects the interests of powerful actors in the West (Svarstad & Benjaminsen, 2021).

Discursive power could be exercised by multiple actors and the construction of discourses and narratives is a common power mechanism in situations where land and natural resources are contested. These discourses could be established and reproduced by political elites, or even by international NGOs or corporations (Svarstad et al., 2018). The authors argue that:

"Political ecology should continue to uncover exercises of discursive power by elites as well as ways in which dominant discourses are modified, adapted, and resisted. The construction of discourses and associated narratives are activities that influence ways of thinking, public opinion, and thereby decision-making (...) Discourses may be more or less hegemonic, thereby constituting the "taken-for-grantedness" of ways of thinking and doing in a society, but often two or more discourses are drawn upon in discussions and decision-making (Svarstad et al., 2018, p. 359).

3.6 Climate change discourses

Benjaminsen & Svarstad (2021) define a discourse as “a socially shared perspective of a topic”. According to Leichenko & O’Brien (2008 referred to in Leichenko & O’Brien, 2019, p. 42) “discourses may be understood as a system of representation that is made up of norms, rules of conduct, institutions, and language that influence and legitimize certain perspectives and meanings over others”. Furthermore, discourses contain both explicit and implicit values which determines the level of discussion on particular issues. These values are also central in relation to which issues that are included, or excluded, from discussions. Accordingly, climate change can be approached in various ways depending on the lens, or discourse. Narratives is another aspect that is closely linked to discourses. Moreover, discourses on climate change reflect different understandings in relation to possibilities for societal change, for instance. Clues to discourses can, accordingly, be found in language and texts related to the issue (Leichenko & O’Brien, 2019).

3.6.1 Three climate change discourses

Leichenko & O’Brien (2019) have identified four climate change discourses presented as the biophysical discourse, the critical discourse, the dismissive discourse, and the integrative discourse. The authors do, however, emphasize that these discourses do not encompass existing discourses on climate change as many others also can be identified. Within the dismissive discourse, climate change and its connection to human activity is downplayed or dismissed as a problem. There is, accordingly, no need for action as climate change is not a real issue or at least not an urgent matter. In relation to the findings of this study the dismissive discourse is not relevant and three out of four discourses are therefore presented.

The biophysical discourse

According to Leichenko & O’Brien (2019) the biophysical discourse is the most common discourse on climate change. Within this discourse, climate change is seen as an environmental problem where emissions of greenhouse gases have increased, and reached a critical level, due to human activities. Furthermore, this discourse prioritizes technical measures and policy interventions to reduce emissions and adapt to the impacts, often referred to as a techno-managerial approach. The technological aspect can include development of renewable energy sources and increasing the energy efficiency of vehicles, and the managerial aspect could include regulations that limit emissions from power plants and developing greenhouse gas

inventories. The view that greater scientific knowledge will promote the needed actions and interventions, is also central within this discourse and the interface between science and policy is, for instance, prominent through the IPCC assessments. Individual behavioural changes through sustainable practices are also emphasized within this discourse. Moreover, the authors state that the biophysical discourse is an approach to scientific knowledge that focus on positivist science, “whereby physical processes and interactions are objectively observed, understood, modelled, and validated” (Leichenko & O’Brien, 2019, p. 44).

The critical discourse

The critical discourse understands climate change as a social problem and focus on “the role of political, economic, and cultural processes and social relations in shaping drivers, impacts, and responses to climate change” (Leichenko & O’Brien, 2019, p. 47). The authors have called this discourse the critical discourse as it challenges the dominant biophysical discourse and because it uses social theory to critique the current structures of society. Moreover, narratives within the critical discourse draw attention to how countries and actors have contributed unevenly to climate change. Investigating politics, power, and vested interests are therefore highly important. The critical discourse is also emphasizing how social and economic processes and power relations plays a central part in driving climate change, and the capitalist economic system is accordingly critiqued. Furthermore, the ‘Capitalocene’ has accordingly been suggested as a more precise label than the Anthropocene (Haraway, 2015 referred to in Leichenko & O’Brien, 2019, p. 47). As opposed to the positivist view on science within the biophysical discourse, the critical discourse emphasizes the social construction of science which recognise that knowing and defining what is valid and true can differ among people. Accordingly, science and scientist are affected by economic, cultural, and political context and is therefore not neutral. Ultimately, a common view within the critical discourse is that humans are not equally responsible for climate change, and the consequences will be experienced defiantly (Leichenko & O’Brien, 2019).

The integrative discourse

The essence of integrative discourse is that climate change is viewed as “deeply rooted in particular beliefs and perceptions of human-environment relationships and humanity’s place in the world, which influences norms, rules, and institutions that support unsustainable resource use and practices” (Leichenko & O’Brien, 2019, p. 41). Moreover, the integrative discourse questions dualistic views and rather see climate change from a holistic perspective where

subjective beliefs, worldviews, and values reflect as well as influence social systems and human-environment relationships. Accordingly, dualistic views refer to the understanding of nature seen as separate from society. The integrative discourse can be seen as an integration of multiple perspectives that can identify as well as generate new approaches to global challenges. An essential aspect of the integrative discourse is the potential to transform human-environment relationships in an equitable and sustainable way (Leichenko & O'Brian, 2019).

3.6.2 The profligacy discourse

Adger et al. (2001) presents a discourse on climate change called the profligacy discourse which understands over-consumption as the main driver of climate change. Moreover, actions to tackle consumption must be addressed.

The climate change discourses presented in this sub-chapter show how various discourses shape our definition of, and ways of studying climate change. They also show which climate measures that are being prioritised within various discourses (Leichenko & O'Brien, 2019). Moreover, conducting a discourse analysis can then be useful through investigating how discourses influence and structure our views on particular topics. Furthermore, it can also be helpful in relation to identify whether actors or groups exercise power through contributing to a certain way of understanding (Benjaminsen & Svarstad, 2021).

4.0 Methods

This chapter presents the method used in this research project. It will initially present the design and methods. Furthermore, it will elaborate on the chosen study area as well as the sampling process before moving onto the data collection and analysis. Finally, it will reflect on ethical considerations, limitations of the study, and trustworthiness.

4.1 Design and methods

4.1.1 Design

The design of this research project has been developed through the main steps in qualitative research, presented by Bryman (2016). In the first stage of the research process two research questions was formulated. The aim of the study is to identify the main narratives on CCS in Norway and understand whether Carbon Capture and Storage (CCS) in Norway is mainly viewed as a positive innovation or if there are prominent critical views (*RQ1*) and investigate how discursive power can be exercised in relation to CCS in Norway (*RQ2*). Later in the process, a sub-research question related to the first research question was formulated to be able to explore underlying factors that contribute to the divergence of opinions on CCS in Norway (*Sub-RQ1*). Secondly, a research proposal was written to outline the design of the research project (Bryman, 2016).

4.1.2 Methods

This research project is conducted through a qualitative research method, and more precisely, qualitative interviewing (Bryman, 2016). Moreover, qualitative research is often presented as contextual and qualitative researcher often argue that a phenomenon can only be understood when context is applied (Brinkmann & Kvale, 2015).

4.2 Choice of study area and subjects

4.2.1 Study area

Throughout the process of deciding on a theme for my research project, I started out with several options that I found interesting. After evaluating the different possibilities, I landed on the topic of CCS in Norway. I thought that Norway would be an interesting study area as two

large CCS projects that are about to be initiated in Oslo and in Brevik within a few years (Gassnova, s.a.). Accordingly, my study area was implied in my thematic choice.

4.2.2 Subjects

When the research topic was decided, I started to investigate relevant subjects. I conducted a document analysis to sort and categorize actors that it could be relevant to interview (Bryman, 2016). Ultimately, I decided to interview political parties, environmental organizations, and CCS-related companies, as I found these groups to be main actors within the field of CCS in Norway. In the next sub-chapters, I will elaborate on the selection of participations within each actor-group.

4.3 Sampling approach

Selection of participants

The selection of participants was done through purposive sampling, which is a non-probability form of sampling. This means that participants were chosen in a strategic way to ensure that they were relevant in relation to the research question (Bryman, 2016).

Furthermore, to be able to collect information on the topic of CCS in Norway, I saw it as relevant, as well as necessary, to get in touch with people that had specific knowledge within this field.

4.3.1 Political parties

The first identified group of actors was political parties in Norway. I read through reports and articles on the web pages and looked at the votes received during the national election in 2021, which resulted in this order: The Labour Party (26,3%), The Conservative Party (20,4%), The Centre Party (13,5%), The Progress Party (11,6%), The Socialist Left Party (7,6%), The Red Party (4,7%), The Liberal Party (4,6%), The Green Party (3,9%) and The Christian Democratic Party (3,8%) (Valg, 2021). All parties, except MDG and KrF, managed to get over the election threshold. There are additional political parties in Norway, but I considered these to be the main political parties.

In the early stages of my sampling process, I considered to interview the Labour Party and the Conservative Party as they receive the majority of votes in Norway, and the Progress Party and

the Red Party to get two representatives from opposite sides of the political scale. Moreover, both the Progress Party and the Red Party holds critical stands on CCS, but for quite contrary reasons. Additionally, it would be crucial to interview the Green Party as they are the only green party in Norway. Initially, I considered to leave out the political parties that were under the election threshold. However, the Green Party is central in relation to CCS, so that would only apply for the Christian Democratic Party. This reasoning resulted in interviewing five out of a total of nine political parties (considering the major parties in Norway), two political parties from the right side of the political scale, one from the center, and two from the right side.

After further assessments, however, I decided to talk to all the political parties. Both the Social Left Party and the Liberal Party are seen as green parties and would be relevant to talk to. Furthermore, the Centre Party constitutes the government together with the Labour Party and received a high number of votes in the 2021 national election. Moreover, the Christian Democratic Party have had increasing focus on climate politics and have been outspoken about CCS (participant 12, KrF). I managed to establish contact with all the political parties except the Socialist Left Party. An interview in late March could be possible, but due to the constrained time aspect related to my process and specifically transcribing the interviews, I chose to proceed with eight out of nine political parties (Brinkmann & Kvale, 2015).

4.3.2 Environmental organizations

Considering the prominent environmental organizations in Norway, I also started with a document analysis by reading articles and reports published on their webpages. Through my investigations, it become clear that Greenpeace and Bellona represented the opposite poles on the scale, with Greenpeace seeing CCS as a ‘resting pillow’ and Bellona seeing it as a central aspect in meeting our climate goals. Spire agrees with Greenpeace and want to focus on other measures. Nature and Youth’s view is that CCS as a necessary tool to be able to reach our climate goals, but that it cannot be at the expense of focusing on renewable energy and saving energy. Zero states that CCS is necessary to reach our climate goals, they are quite positive to technical solutions, but says as well that this must be seen as an emergency solution. However, sampling does not always goes as planned as it depends on who you hear back from and the time frame you have for your project (Brinkmann & Kvale, 2015). I did not hear back from Nature and Youth or WWF, so I decided to talk to the Future in our Hands instead.

4.3.3 CCS-related companies

First of all, I thought it was relevant to interview Equinor as this is a state-owned energy company which plays a central part in the storing of CO₂ in Norway. Secondly, I found it useful to talk to Heidelberg Materials which is a cement factory in Brevik and the pilot project on CCS in Norway. It was also relevant to talk to Hafslund Oslo Celsio as they also are part of the CCS pilot-project. It would also have been relevant to talk to Northern Lights, a company partially owned by Equinor, which is responsible for the storage of CO₂ in Norway. However, I contacted them without success. Ultimately, the selection of participants was 16 actors from environmental organizations, political parties, and CCS-related companies. **Table 1** presents an overview of the final list of participants.

Participant number	Organization/political party/company	Gender
1	Zero	Female
2	Bellona	Male
3	The Conservative Party (H)	Male
4	Greenpeace	Male
5	The Red Party (R)	Female
6	Hafslund Oslo Celsio	Male
7	Spire	Female
8	The Progress Party (FrP)	Male
9	The Liberal Party (V)	Male
10	The Green Party (MDG)	Male
11	Equinor	Female
12	The Christain Democratic Party (KrF)	Male
13	The Labour Party (Ap)	Female
14	The Future in our hands (FIVH)	Male
15	The Center Party (Sp)	Male
16	Heidelberg Materials	Male

Table 1: Overview of participants

4.4 Data collection

I have used semi-structured interviews to collect data as this can provide specific information, but at the same time be open to other inputs. The semi-structured interview can according to its structure, have varying forms depending on the research. Furthermore, a semi-structured

interview has a flexible interview guide that leads the conversation. The interviewer can adapt to the specific interview situation by responding to what seems important for the interviewee and formulating new questions that follow up topics that seem relevant for the study (Brinkman & Kvale, 2015). In addition, I did also use secondary sources when writing the background in chapter 2.

4.5 Data analysis

The overall analytical framework of this research project is a narrative analysis. Benjaminsen & Svarstad (2021, p. 69) defines a narrative as “a story that has a storyline and the involvement of one or more actors in a gallery of actors”. Moreover, Roe (1991) defines narratives as stories with a beginning, a middle part, and an end, but if the narrative is in the form of an argument, it consists of premises and conclusions. Through the conducted analysis, narratives in the form of an argument were most prominent. After I had conducted the interviews, I transcribed and coded them to be able to start my analysis. The information I received from my interviews was coded using NVIVO which is a technical qualitative coding tool. Accordingly, I started without codes and developed them when I read through the material (Brinkmann & Kvale, 2015). In the first coding round I went through all the material and made 20 different categories. In the second round of coding, I combined the categories that was related to each other, reducing it to 10 main categories.

In the final round of coding, I categorized the most prominent views and narratives within certain topics in Excel, and I created one table for each group of actors (appendix 1, 2, 3). I applied a color scheme to clearly visualize the views held by the various actors within each topic which furthermore complements the included text basis. The bright green color implies that the actor is positive, light green slightly positive, light red slightly negative, and red indicate that the participant has a negative stand on the topic. Moreover, these tables are a simplification of the narratives that was identified but was helpful in relation to get an overview of the main views within recurring topics (Leichenko & O’Brian, 2019). Although these tables are written in Norwegian, I find it useful to include them as they visualize the final step of the narrative analysis.

4.6 Ethical considerations

There are several ethical considerations that must be taken into account in a data collection process. How to treat the participants in the research project, moreover, is a central ethical consideration (Bryman, 2016). In relation to this, Brinkmann & Kvale (2015) highlight four central aspects: *informed consent*, *confidentiality*, *consequences*, and *the role of the researcher*. The purpose of informed consent is to inform the participants of the purpose of the study and how the study will be carried out. Furthermore, it is also important to emphasize possible risks or benefits connected to participating in the study as well as the participants right to withdraw from the project at any time. Ahead of the interviews an informed consent form, including information about the project as well as information related to the implication of participating, was sent to the participants. Furthermore, I brought a printed copy of the informed consent form to the interview for signing, so that I could explain the information further if necessary. Bryman (2016, p. 122) emphasize, however, that it might be desirable to hold back details related to the research project when information is given to the participants. The reasoning behind this is that withholding some information could result in more sincere answers from the participants. For instance, a participant with full insight to the project could say things he/she thinks the interviewer would like to hear, or information he/she considers to be the 'right' answer.

The second aspect of *confidentiality* refers to the agreement between the researcher and the participant on how the data might be used (Brinkmann & Kvale, 2015). Upholding anonymity and confidentiality are important to avoid harming the participants and this can be assured through keeping information confidential as well as ensuring that participants will not be identified (Bryman, 2016). The third aspect, called *consequences*, emphasize that possible consequences of a study must be addressed in relation to possible harm to the participant or benefits connected to participating in the study. This aspect was also prominent within the aspect of informed consent. Moreover, another consequence of qualitative research could be prominent through the research situation. For instance, the openness of qualitative research may cause participants to share more information than intended which they might regret later (Brinkmann & Kvale, 2015). The participants within my research project were talking on behalf of their political party, organization, or company, and the interview was therefore not as personal. However, it is still important to consider this aspect.

The fourth and last aspect concerns the role of the researcher. The integrity of the researcher and his/her personal role are vital factors that influence the quality of the scientific knowledge

and ethical decision-making in qualitative research. This is especially important within the field of interviewing as the researcher himself or herself is the main instrument for procuring knowledge. In addition to upholding ethical standards, researcher must also adhere strictly to scientific standards of quality when publishing their knowledge which involves presenting the findings with a high level of accuracy and representativeness. Before I could initiate my research a thorough description of my research project had to be evaluated and approved by the NSD¹⁰.

4.7 Limitations

It is important to identify and consider possible limitations of a study.

4.7.1 Selection of participants

Interviewing representatives from a political party, an environmental organisation or an employee in a CCS related company will have its limitations to draw a narrative from that specific unit. When I interviewed an employee from Equinor, for instance, which is an international energy company, the representative was often telling me that Equinor's opinion might be different. Another aspect to be aware of in relation to the selection of participants is that the people I talked to had specific knowledge on CCS or worked within this field. This did not apply to everyone, but the majority was related to this field. However, it is important to remember that this resulted in a group that know something about CCS.

4.7.2 Language

Another limitation within this research project could be identified in relation to language. The interviews were conducted in Norwegian, and the quotes included in the analysis in chapter 5 are therefore translated to English by me. Although the translation is conducted as directly as possible, points or meaning can have been lost in translation (Brinkmann & Kvale 2015).

4.8 Trustworthiness

Trustworthiness is constituted by four criteria which together can be used to assess the quality of qualitative study (Lincoln & Guba, 1985 referred to in Bryman, 2016). Going further, I will elaborate on the aspects of credibility, transferability, dependability, and confirmability.

¹⁰ Norwegian Center for Research Data.

4.8.1 Credibility

The aspect of credibility emphasizes that there are multiple accounts of social reality. The credibility of the findings will therefore determine if other people will accept these findings or not. Aspects such as conducting a study according to good practice and including a respondent validation are important to strengthen the credibility of the findings. Respondent validation involves sharing the findings with the participants to assure that the observations was correct and in line with the participants views (Bryman, 2016). I did not conduct a respondent validation, or at least not an adequate one. I did only send the transcribed interview to the participants who asked for it, which accordingly weakens the credibility of the findings.

Furthermore, using more than one method or source of data when studying social phenomena, is referred to as triangulation and this technique is also recommended to strengthen the credibility. According to Stake (2000, p. 443) “triangulation has been generally considered a process of using multiple perceptions to clarify meaning, verifying the repeatability of an observation or interpretation”. However, as observations or interpretations are difficult to repeat directly, triangulation is also a tool that identifies how a phenomenon might be seen through different lenses. The purpose of this tool is to cross-check information in a research project to gain a higher level of confidence in the findings (Bryman, 2016). Within my research project, interviews were chosen as the main and only method. However, I used both primary data, collected through the interviews, and secondary data which enabled me to cross-check certain information. This did also strengthen the credibility.

4.8.2 Transferability

Transferability within qualitative research can be related to the aspect of thick description which can be understood as rich accounts of the details of a culture (Bryman 2016). Moreover, providing a thick description in a research study gives the readers insight to a database of information of which they can evaluate the transferability of the study and consider if it could be applicable to other contexts (Bryman 2016). Throughout this research project, thorough information has been provided, and especially in relation to the views of the participants. This could strengthen the transferability of the study. However,

4.8.3 Dependability

According to Bryman (2016), dependability within a qualitative study refers to keeping records, or an audit trail, of all phases of a research process. Furthermore, the idea is that the material could be accessible so that other researchers could act as auditors and check if the correct procedures have been used. Apart from my supervisor, who has followed my project and commented on my work throughout the process, no one else has had insight. Aspects that strengthen the dependability, however, is that I have kept track of the process through reflections, decisions, and notes in a personal journal as well as thoroughly transcribing the interviews which the study is based upon.

4.8.4 Confirmability

Although it is impossible to obtain complete objectivity, acting in good faith by putting personal values aside, at least to an extent where they do not influence the conduct of the study, is a central aspect connected to the aspect of confirmability (Bryman, 2016). I feel that I have managed to act in good faith throughout the research project, and since the conducted data analysis could enable a high degree of subjectivity, this has been a persistent reminder. This aspect could, moreover, strengthen the confirmability of the study (Bryman, 2016).

5.0 Analysis

This chapter presents the findings of the study conducted through a thematic narrative analysis. As a result, five main narratives were identified which have been named; the ‘win-win’ narrative, the ‘maintaining our everyday life’ narrative, the ‘avoiding energy crisis’ narrative, the ‘greenwash’ narrative, and the ‘systemic change’ narrative. It is, however, important to emphasize that discourses and narratives depend on their co-production and the context in which they are produced. As a result, they can change in accordance with alternations within these aspects. In addition, it might be difficult to draw lines between various narratives as actors may hold an intermediate position which include elements from various narratives (Benjaminsen & Svarstad, 2021). Going further, I will elaborate on the analysis related to each of the five narratives, starting with the ‘win-win’ narrative.

5.1 The ‘win-win’ narrative

The first identified narrative is the ‘win-win’ narrative. This narrative centers around the view that it is unrealistic to achieve the climate goals without using technological solutions such as CCS. Additionally, a second prominent view within this narrative is that Norway has certain prerequisites which gives us a competitive advantage in developing CCS. Together these views create a win-win situation. Accordingly, this narrative includes the two aspects identified as *more of everything*, and *competitive advantage*. Even though these aspects constitute the ‘win-win’ narrative, it does not imply that all participants placed within this narrative position themselves in line with both aspects. The selected participants’ main view on CCS in Norway are, however, in line with this narrative. More than half of the participants, accordingly 9 out of 16, have been placed within the ‘win-win’ narrative. Among the political parties, this includes H, V, MDG, KrF, and Ap. Bellona and Zero represent the environmental organizations, and two of the CCS-related companies, namely Hafslund Oslo Celsio and Heidelberg Materials are also placed in this group. Moving on, I will elaborate on the findings distributed on the two aspects that constitutes the ‘win-win’ narrative, starting with *more of everything*.

5.1.1 More of everything

The first prominent view connected to the ‘win-win’ narrative is that we need all the climate mitigation measures available as we are running out of time to reach our climate targets. Accordingly, we need more of everything. Most of the participants placed within the ‘win-win’

narrative expressed or mentioned thoughts in line with this aspect. Moreover, this includes five participants from the political parties (H, V, MDG, KrF, Ap), as well as the participants from Zero and Hafslund Oslo Celsio. In broad terms, the participants within this narrative see themselves as technology optimists. In this sense, the participants within the ‘win-win’ narrative can be understood as realists, or pessimists, depending on the point of view, in that it is impossible, or at least extremely challenging to tackle climate change without technical solutions. Neither participant 10 (MDG) nor participant 9 (V) used the word “technology optimist” directly, but they stated that “technology development is a very important part of the solution” (participant 10, MDG) and “technology development is absolutely necessary to reach the global targets” (participant 9, V). The same applies to the participants representing Bellona, Hafslund Oslo Celsio, Equinor, KrF, and Heidelberg Materials. They did not refer to themselves as technology optimists, but their view on CCS is in accordance with this expression. Returning to the matter of ‘more of everything’, participant 1 (Zero), stated that:

“We must get solar cell production and establishment in place, we must get more wind power on land in place, wind at sea, and certainly energy efficiency. Perhaps also decrease the need for things, we must use less, think differently about spatial planning, and use CCS. All measures must be rolled out at the same time. We can’t wait”.

Participant 13 (Ap) did also emphasize this view and said that “it cannot be either or, it must be both and more¹¹” and participant 10 (MDG) shared the thought: “I think we are at a stage where we have to use all available means”. An overarching and recurrent sentence, quite similar to the former but narrower, was also prominent among some participants: “we need to use all available technologies” (H, KrF). Participant 9 (V) did additionally emphasize the time aspect through saying:

“We do not have the time to choose, we need more of everything (...) We must cut emissions from large industries as well as capture CCS [from the atmosphere] through bio-CCS¹² or DACCS¹³”.

Other participants used slightly different wording, but with the same meaning, such as “these are calculations that needs to add up” (V), and accordingly ‘more of everything’ is essential.

¹¹ Translated from Norwegian: det kan ikke være enten eller, det må være både og.

¹² CCS on, for instance, waste management with biological sources which results in negative emissions.

¹³ Direct Air Capture with Storage (IPCC, SFP. 2022).

Similar views were also expressed by the CCS related companies. For instance, participant 6 (Hafslund Oslo Celsio) said that “it is a bit late with the debate about ‘should we do this or that’. I think we need to do everything”. In relation to this, participant 3 (H) talked about the report published by the Energy Commission (‘More of Everything – faster’) and criticized the low emphasis put on CCS. According to him, the Energy Commission have a rather contrasting view on the readiness, or the usefulness of CCS as opposed to his opinion. Furthermore, this was how participant 3 (H) expressed his opinion on the matter:

“The Energy Commission came up with a solid report and said, ‘more of everything’ (...) They hardly mentioned power production with CCS as an option (...) If you read what is written in it, you will find the word *gas* and *CCS* in a few places, and then it is designated as a dying technology (...) I find it almost a little frightening that they designate it as a dying technology when I am a technology optimist, and the Conservative party is a technology optimist”.

More than just technological measures

It is also important to note that the statement ‘more of everything’ often included changing systems and consumption patterns in addition to technological solutions. Accordingly, multiple participants mentioned this during the interviews (Zero, Hafslund Oslo Celsio, V, MDG, Ap). Participant 2 (Zero) gave a clear answer in relation to this:

“Technological solutions are not enough. We absolutely need a system change, that is obvious. It goes hand in hand. Behavioral change too, we need to produce less, consume less, think differently about how we build cities, and reduce the need to transport oneself from A to B. It’s the whole package, absolutely”.

Participant 10 (MDG) did also say that we “need all solutions. Included societal changes”. Moreover, he stated that technological solutions are essential to reach our climate goals, but it must, however, be understood as “a part of the total mix”. Cutting of the debate by only focusing on technological measures, however, would be a co-opting mechanism¹⁴. Accordingly, participant 9 (V) expressed a similar view saying that:

“It has been absolutely necessary to promote the zero-emission technology (...) And this must happen in parallel with taking care of much more nature, restore much more nature. And in

¹⁴ “Co-opting denotes words and expressions that originate at one level and that change on their way through different institutions and levels” (Førde, 2010).

parallel to where we are furthest behind, looking at the value chains of food production. It is absolutely necessary to make changes”.

On the question on whether technological solutions will be enough or if a systemic change is needed, participant 6 (Hafslund Oslo Celsio) answered that we absolutely need such changes, and he drew a line to waste management. Accordingly, he said that we must improve the product design by making products that can last longer, and we need to adapt products for recycling. Moreover, it must be easier to dismantle products such as, for instance, insert phone batteries without using glue. He also said that “it clearly requires a whole system change and a societal change where you go from ‘use and dispose’¹⁵ to a more circular way of thinking, but you can’t do that in seven years”. Correspondingly, he states that a comprehensive change including both technological solutions and systemic changes is needed. However, the realist standpoint appears in relation to the time frame reference, where making these systemic changes within 2030 is considered as highly unlikely. He is implicitly saying that *technological* solutions equal *realistic* solutions. This was expressed even more clearly when he added: “You have to be pragmatic along the way and do everything. If you can apply CCS on Klemetsrud and remove [emissions equivalent to] 200.000 cars, then you do that instead of hoping for a system change to happen someday” (participant 6, Celsio).

Although multiple climate measures were mentioned within the aspect of ‘more of everything’, it appeared in a varying degree. Answering the same question as presented in the previous paragraph, participant 3 (H), and 12 (KrF) expressed the need for a system change but focused mostly on an energy transition. Correspondingly, participant 3 (H) said that the Conservative Party (H) had made its own climate strategy focusing on energy efficiency. A central aspect within this strategy was to stimulate the use of solar power as well as creating energy plans within each municipality on how they could contribute to power production. Another aspect was to make Norwegian homes more energy efficient through, for instance, three-layer windows and post-insulation¹⁶. Participant 12 (KrF) did also acknowledge the concern related to technology optimism taking the focus away from other solutions such as system changes. However, he disagreed with this view in relation to CCS in Norway and stated that:

¹⁵ Translated from Norwegian: bruk og kast.

¹⁶ Translated from Norwegian: etterisolering.

“If you end up with a situation where you postpone societal changes because of a potential technology that might come, that’s not good. But I don’t quite feel that this is the case with CCS, given the premise that this is a technology Norway needs” (participant 12, KrF).

Other participants (Bellona, Heidelberg Materials), moreover, were clearly critical towards the ability to go through with a system change. Participant 2 (Bellona) mentioned for instance the UN 1.5°C special report where all the realistic scenarios include a high degree of CCS, involving both CCS on fossil sources and removal of CO₂ from other emitting sources. Related to this, participant 2 (Bellona) stated:

“I think there is one scenario which is based on a lower degree of CCS, but that requires a revolution in transforming energy and production which I think is highly unlikely. So, the less realistic a system change is, the more CCS you need”.

Participant 2 (Bellona) elaborated further by saying that “Bellona work very little with the choices made by individuals. In our opinion it is too much to ask that each individual should be responsible for reducing greenhouse gas emissions”. According to the participant, most emissions are produced through industries which is beyond our control. As a result of this, the opportunity to make rapid and necessary changes are bigger within industry than in relation to individuals. Adding to this, he stated:

“The choices people make are obviously important, how we travel, how we consume, and what we eat and so on (...) In other words, we don’t think much about the amount of copper, steel and concrete produced because we want a nice place to live, a nice road to drive on, and travel with a nice train (...) And there is not much an individual can do about it beyond the ballot” (participant 2, Bellona).

Participant 16 (Heidelberg Materials) was also sceptical towards large societal changes. He specifically expressed his concerns in relation to drastically reducing the use of cement, and how this inevitably would affect China which is the world’s biggest producer of cement. For instance, if the cement production in China went from 1.8 tons per capita to 500 kilograms per capita as in Norway, that alone would halve emissions from cement worldwide. This would accordingly be an upheaval for China and all the people who work within this industry. In continuation of this, participant 16 (Heidelberg Materials) stated:

“If we make too big changes, upheavals, it can be difficult for the society to absorb the adjustment process needed. It may be better to take these slightly smaller steps. Let’s say if you cut emissions drastically, which of course is a possibility, then it will actually mean that people will be worse off, won’t it? It means that people lose their jobs, people get poorer (...) So, keeping steady on making small steps to cut emissions, becoming more sustainable along the way, I think that is the best recipe”.

Participant 16 (Heidelberg Materials) did also refer to those who suggests using renewable resources by building in wood instead of concrete. Moreover, he argued that “it could be possible here in Norway, but if I put on a global hat, then it is obviously not possible”. In that case we would have to cut down massive amounts of forest, which is anything but realistic. Accordingly, “it would be a natural disaster”.

Ultimately, when I asked these participants if it would be possible to achieve the climate goals without using CCS, they all said that it is high unlikely and at least very difficult (Zero, Bellona, H, Hafslund Oslo Celsio, V, MDG, KrF, Ap, Heidelberg Materials). Participant 2 (Bellona) replied that:

“The revolution which in that case is required is so extensive and fast and so unlikely that I think it is irresponsible to have that as plan A” (participant 2, Bellona).

Going further, I will move on to the next aspect within the ‘win-win’ narrative which is *competitive advantage*.

5.1.2 Competitive advantage

The aspect of *competitive advantage* is based on the view that Norway has a set of prerequisites which gives us a competitive advantage in developing CCS. Moreover, Norway has the necessary geological prerequisites, and developing this technology is therefore realistic (Zero, Bellona, H, V, MDG, KrF). All the participants within the ‘win-win’ narrative (Zero, Bellona, Hafslund Oslo Celsio, H, V, MDG, KrF, Ap, Heidelberg Materials) expressed, moreover, that Norway already is, or should aim at becoming a leading country within the CCS technology. Additionally, as oil and gas will be phased out eventually, there will be a need for new technologies (MDG, Zero, V). Expressing the win-win view, participant 6 (Hafslund Oslo Celsio) said that: “we see carbon capture both as an obvious way to achieve the climate goals,

and now it is also a very big business opportunity”. In relation to the competition advantage, participant 1 (Zero) stated that “we have an enormous storing capacity (...) It has been mapped by the Norwegian Petroleum Directorate, it is absolutely massive”. Furthermore, participant 1 (Zero) stated that CCS is a familiar technology and that “we have expertise, we have experience, we have willing actors”. Moreover, this advantage could also be connected to responsibly as Norway “export enormous CO₂ emissions” (participant 1, Zero). Continuing her reflection in relation to big emitters, participant 1 (Zero) stated:

“It is also important to compare it to other aspects. Norcem [Heidelberg Materials], for instance, will eventually be able to sell a product with which they compete very well. [Heidelberg Materials] aim for an emission-free cement and if we set up tenders where we prefer, let’s say in a government building or motorway (...) that it is a requirement to get a tender to deliver emission-free cement, then Norcem [Heidelberg Materials] hold an extremely strong position”.

Participant 6 (Hafslund Oslo Celsio) added to the view on a competition advantage among industries by saying:

“If you are going to ‘license operate’ in the future, you must be able to do so with as low emissions as possible. And we will of course be able to offer, when our facility is finished, CO₂-neutral waste management as the only facility”.

Additionally, participant 3 (H), participant 8 (FrP), and participant 15 (Sp) stated that the Norwegian oil is cleaner than oil from other countries and therefore more competitive. For instance, participant 8 (FrP) said that “everything we have in Norway is a bit cleaner than what they have in other countries”. Participant 15 (Sp) emphasized how this could be a competitive advantage through stating: “we believe that it is better that Norway produces oil and gas, than leave this to regimes we do not like to compare ourselves with, and that [produces oil] through a less climate-friendly method (...)”. Furthermore, participant 3 (H) echoed this positioning by saying:

“(…) but, also to, in a way, not legitimize, but be the preferred supplier after 2050 when we will have zero emissions. So where will they buy oil from then? From the Gulf where there is 30 kilograms per barrel in emissions, or 17 kilograms on the British side, or 0.5 kilograms on the Norwegian side?”.

As the only participants within the ‘win-win’ narrative, participant 9 (V) rejects the understanding of Norwegian oil as being cleaner. Summing up the ‘win-win’ narrative, the unison positioning within the view that it is unrealistic to reach our climate goals without CCS is a central aspect. Moreover, views in line with the two presented aspects of *more of everything* and *competition advantage* is broadly represented within this narrative. Moving on, I will elaborate on the second narrative; the ‘maintaining our everyday life’ narrative.

5.2 The ‘maintaining our everyday life’ narrative

The ‘maintaining our everyday life’ narrative is the second identified narrative within this research project and includes participant 8 (FrP) and participant 15 (Sp). Similar to the participants within the ‘win-win’ narrative these representatives do also see themselves as technology optimists. Participant 15 (Sp) stated, moreover, that he is a “technology realist” which, according to him, means using technology that exist such as CCS. Although both the participants (FrP, Sp) had several views that corresponded with the ‘win-win’ narrative, they did also address another, in their opinion, prominent advantage of CCS, which is that this technology allows us to maintain our everyday life. Accordingly, an important aspect is that we can avoid drastic changes and spend more time on the transition towards net zero, unlike what we can without CCS. Furthermore, participant 8 (FrP) stated that:

“The most important thing is that we can maintain our everyday life. I think that is the most important thing. And not that we shouldn’t do anything, but readjustment takes time. If we can buy ourselves time, I think that is unconditionally positive. And we know that an awful lot of our energy is based on fossil fuels (...) If we can create arrangements that keep emissions at bay while we adapt, we can keep our everyday life and go through with the transition at a slower pace”.

Participant 8 (FrP) is explicitly stating that a major energy transition is anything but realistic. Moreover, a systemic change, which implies changing our everyday lives and changing our energy composition, is unlikely. Participant 15 (Sp) expressed similar thoughts and stated that:

“I think that by far the fewest of us want a very big change in the way we live our lives. I think most of us want to have a certain welfare, a certain standard of living. And then I think we will have to use the technology that exists, including industrial capture and storage of CO₂”.

What participant 15 (Sp) is implicitly saying is that a systemic change will imply a reduction in welfare. Moreover, a similar reference to ‘reduced welfare’ did also appear in a comment from participant 6 (Hafslund Oslo Celsio) when he acknowledged the views held by Zero and Bellona:

“[Zero and Bellona] are very clear about where they want to go, they want to cut emissions, they want to do better for the climate and the environment, but they do also acknowledge that we cannot go back to the Stone Age”.

Again, the participant implies that going through with a systemic change is associated with a reduction in welfare as I would assume that “going back to the Stone Age” implies going back to a ‘primitive’ era in world history. However, this statement appeared in a comment and was not a central aspect within the views of participant 6 (Hafslund Oslo Celsio), and he is therefore placed within the first narrative. In relation to maintaining our everyday life, participant 13 (Sp) stated that “we must develop, not liquidate Norwegian oil and gas”. This was also echoed by participant 8 (FrP) which added that “we can maintain the activity on the Norwegian continental shelf¹⁷ and make blue hydrogen”. Participant 8 (FrP) did moreover focus on what he saw as a big discrepancy and said that the biggest mistake within Norwegian climate policy is the inability to see energy and climate as interconnected fields. Furthermore, he stated:

“When the government says that we will cut emissions by 55%, it should be a simple question to answer. How would that be manageable? Where will you get the energy from? The answer has been offshore wind for a few years now, but the price equals four times the current electricity price and we know that the amount of offshore wind established before 2030 will be limited. So, we have major explanatory problems” (participant 8, FrP).

Accordingly, he stated that we need to continue the activity on the Norwegian continental shelf as we need energy to maintain our everyday life. Continuing this reflection, he stated:

“We have an energy production where more than 80% is based on fossil fuels. It is then very hypothetical to get rid of fossil fuels in a short run. And then we need to have some options. Replacing one crisis with two new ones is not a smart move. We take the climate situation seriously, but the world is completely dependent on having access to energy (...) And then fossil

¹⁷ Translated from Norwegian: *sokkelen*.

fuels will probably have to be with us for a while longer and then CCS comes in as a very important technology”. participant 8 (FrP)

For the contrary, however, the participants from Zero, MDG, and V said that Norwegian oil and gas “must be phased out as soon as possible”. Moving on, I will present the third narrative which is the ‘avoiding energy crises’ narrative.

5.3 The ‘avoiding energy crisis’ narrative

The ‘avoiding energy crisis’ narrative is based on the view that Norway and the world could experience energy shortage within the foreseeable future (participant 11, Equinor). This narrative has strengthened recently due to the war in Ukraine as the invasion “sent energy markets into turmoil” (Birol, 2023). Moreover, Equinor stated that “it is clear that, with the whole energy crisis as a result of the war, people are more positive about Equinor as a company and about oil and gas”. Furthermore, she said that “with the war in Ukraine, and energy shortages, we may have experienced a little fast-tracking of changes in public opinion. That blue hydrogen and CCS are important to be able to keep the industry going (...)”. The energy crisis view was moreover, and probably to a larger degree, prominent through a miniseries created by Equinor called ‘The biggest test’. I watched the series as part of my documents analysis when I mapped Equinor’s views on CCS. Throughout the episodes four young people explore the plan set out by Equinor to reach net zero by 2050, and the main dilemma is presented as “The world is in the midst of an energy crisis – while the climate crisis is looming. Will we tackle both?” (Equinor, s.a., b).

Other participant did also mention the possibility for an energy crisis (Bellona, H, FrP, Hafslund Oslo Celsio, Ap). Accordingly, participant 3 (H) commented on the energy crisis and stated that:

“People have perhaps become more technology optimists because of the current situation the last two years with the tightening energy situation, future energy demand is increasing, and production is not increasing correspondingly. There have been several proposals in the Parliament from various parties that we must start with CCS and gas production (...)”.

Moreover, participant 8 (FrP) stated that we probably will work it out in the long run, both emission reduction and CCS, but cutting emissions by 55% within 2030 is unfortunately

unlikely. In addition to expressing concern towards demand for energy in Norway he draws a line to the demand globally:

“Over a billion people do not have access to electricity. We must ensure that they, to a greater extent, will be able to take part in the positive growth in prosperity that the world has had in recent years. And accordingly fossil fuels will probably have to be with us for a while longer, and then CCS comes in as a very important technology” (participant 8, FrP).

Participant 13 (Ap) stated that “it has probably become even more relevant to discuss CCS, and especially after the war in Ukraine when the need for energy has increased considerably”. Participant 2 (Bellona) did also focus on this aspect and especially related to power generation through gas with CCS. He stated that “this case will be strengthened because the power on the grid is quite expensive right now. There is a great appetite for producing more power in a fast and efficient way (...)”. Participant 12 (Hafslund Oslo Celsio) did, furthermore, reflect on how the current energy shortage strengthens their business model as they burn waste and produce electricity from the surplus heat. He stated:

“We have seen, with the war in Ukraine, that the energy argument, which we try not to talk about so much because we are supposed to manage waste, but you solve three things at once. It is kinder egg. In Eastern Europe and Southern Europe where you often depend on imported energy from Russia, or have been, you can make your own energy locally though waste management, you can stop using garbage dumps and then you also reach your climate goals through having CCS and get negative emissions” (participant 12, Hafslund Oslo Celsio).

Ultimately, participant 1 (Zero) was the only participant within the realism narrative that was critical towards the term ‘energy crisis’ and she expressed this scepticism through saying:

“I think it is a bit embarrassing to see how Norway, profiting is one thing, but is also using it as an argument to continue building out the extreme large number of licenses that have been released recently. Preferable with that as a basis, that we have to supply Europe with electricity”.

Summing up the ‘avoiding energy crisis’ narrative, these statements show that there is a prominent view on the energy crisis among several actors. However, Equinor is the only actor that exclusively focus on this aspect. Going further, I will move on to the fourth identified narrative; the ‘greenwash’ narrative.

5.4 The ‘greenwash’ narrative

The greenwash narrative perceives the use of CCS as a greenwash and as a false solution in relation to global warming and can therefore be understood as a counter-narrative to the realism narrative. In contrast to the realism narrative, only one participant is placed within the greenwash narrative, namely Participant 4 (Greenpeace). Participant 4 (Greenpeace) stated that using CCS within fossil-based energy production is “the clearest greenwashing there is”, and he furthermore criticized CCS by saying that “it is a false solution to the climate problem”. Furthermore, he stated that “we use the entire CCS capacity on activities that must be phased out in order to achieve our climate goals. The CCS technology is insanely expensive. It’s a technology that hasn’t been proven to work, and it is insanely power intensive”. Moreover, he pointed towards renewable energy as an alternative which accordingly can solve the current challenges in a “cheaper, simpler, and safer way”. In response to the question on what the reason for the positive positioning towards CCS in Norway might be, participant 4 (Greenpeace) said that: “the reason why we talk so much about CCS in Norway is because those in power want to maintain the fossil fuel industry. It’s as simple as that”. Additionally, he stated:

“Norway differs from the rest of the world in that almost everyone sees CCS as the solution to tackle the climate crisis. That is very strange, because the scientific foundation for this is very, very thin. This is, accordingly, linked to how the media devour the narrative of having emission-free gas in the future. We don’t see this anywhere else in the world. However, in Finland, for instance, the media devour that biofuel is the future because they have a very powerful forestry industry. In Norway we have a very powerful gas industry, so we are accordingly talking about CCS” (participant 4, Greenpeace).

He continued this reflection by saying:

“It’s related to the fact that the oil industry spends a lot of resources promoting this narrative, and they do it in collaboration with LO¹⁸ and NHO¹⁹. The communication they use in relation to blue hydrogen implies that ‘this is how we make the gas industry emission-free’. And when that becomes the common perception of blue hydrogen, that’s the way the journalist perceives it and the way the politicians perceive it. And then, somehow, we also assume that this is how

¹⁸ The labour movement.

¹⁹ The Confederation of Norwegian Enterprise.

it is. None of these people has the time to properly familiarize themselves with research and such” (participant 4, Greenpeace).

Participant 4 (Greenpeace) added to his reasoning on how companies promote CCS, by saying: “worldwide we see examples of oil and gas industries using CCS as a communication tool to sell oil drilling and continued oil industry. Then they say, ‘we will be alright because we have a technology around the corner’”. Participant 4 (Greenpeace) was also concerned about the production of blue hydrogen and criticize the current focus on this through stating:

“My impression is that many people think blue hydrogen, in a way, is 100% pure. I don’t think they know that removing 40-50% of the emissions is the most common outcome. And finally, there is the aspect of costs. I don’t think people have taken that into account. Studies show that green hydrogen is much cheaper than blue hydrogen, if a large proportion of the CO₂ is removed. In other words, blue hydrogen is only profitable in a scenario where you want to cut a small amount of the emissions. This will probably be the case, but if we are to cut all emissions, which we must, blue hydrogen is not a real climate solution. But it’s difficult because it gets very technical. So, it’s hard to get these things through. There is a small group of people who know much about CCS, and almost everyone works in the oil industry. So, it is a knowledge problem as well” (participant 4, Greenpeace).

In addition, the participant argued that the enlargement of this perception of blue hydrogen was “especially the industry and LO’s fault”. When I asked about CCS on hard-to-abate industries, participant 4 (Greenpeace) stated that Greenpeace are principled against CCS within industries such as waste management as “this way of thinking enables a reckless waste producing technology”, but he also said that this is “probably not going to be our priority”. He did, moreover, base this on the fact that “there are almost no climate scenarios that do not include CCS”. Moreover, he said that we must change our focus towards renewable energy, and accordingly, “to be able to carry out the genuinely green projects, such as offshore wind and battery factories and green hydrogen, we must phase out oil production to make room for new industries. And then CCS stands in the way”. Ultimately, he added that: “CCS requires an incredible amount of power, which means more power development and, in a way, even bigger problems” (participant 4, Greenpeace).

Other participant did also acknowledge the possibility of greenwashing

Participants placed within other narratives did also express concerns regarding greenwashing, and especially in relation to fossil-based energy production (R, FIVH). They were, however, not solely critical towards CCS like the participant from Greenpeace. Participant 14 (FIVH) stated that:

“The most important disadvantage is the extent to which [CCS] legitimizes. And almost more important than CCS itself, the promise of a future CCS. The idea that ‘yes, we can continue with emissions because soon there will be a mature technology that will remove these emissions’”.

Participant 1 (Zero) acknowledged the concern for greenwashing but did not express this concern herself. Moreover, she stated:

“(…) we have increasingly focused on industry and that has been very important in many countries where it has been seen as a greenwashing to a large extent. It is much easier to reach them if you first and foremost lift the need within industry and waste management”.

Continuing in the same track, participant 2 (Bellona) did also recognise the concern but stated that: “many environmental organizations have expressed their scepticism as to whether this was just greenwashing of fossil energy (...) But that argument is weak in relation to waste management and the cement industry”. One of the participants expressed an opinion that was completely opposite to the opinion held by Greenpeace. Participant 15 (Sp) said that:

“I think we have to cut emissions in the oil and gas sector and on the continental shelf in order to give legitimacy to that industry in the future. And the Center Party wants to develop that industry. We see that the world will need fossil energy and fossil products in the foreseeable future”.

Even though the ‘greenwash’ narrative consists of only one participant, the message is loud and clear, CCS is a false solution. Moreover, as already mentioned, other participants did also mention greenwashing and especially in relation to fossil-based energy production and as a threat towards the shift to renewable energy. Divided opinions did, however, position them within other narratives. Going on from here one narrative remains, and I will, ultimately, present the ‘systemic change’ narrative.

5.5 The ‘systemic change’ narrative

The ‘systemic change’ narrative encompasses the view that CCS might be useful within some sectors, but that we cannot undermine uncertain and critique-worthy aspects of this technology. There are, moreover, other prominent solutions that are more suitable to impede climate change. The three remaining participants, namely 5 (R), 7 (Spire), and 14 (FIVH), are placed within the ‘systemic change’ narrative, as they, for the most part, focus on social rather than technical solutions. Accordingly, we need “new ways of sharing things, consuming less, or reduce the need for material consumption and fossil emissions by interacting more and organizing things better” (participant 15, FIVH). On the question on whether technological solutions will take focus away from the transition to renewable energy and a systemic change, participant 5 (R) stated that she “absolutely thought so”. Moreover, she said that: “[technological solutions] are not enough, it is not necessarily the case that you should dismiss it, but it is not enough (...) I do not trust that it solves the problems we are facing”. According to participant 5 (R), a solution should be a combination of technological solutions and systemic change. Moreover, she said that “we need more renewable energy, but we need it to go hand in hand with reducing consumption. If not, you will not be able to solve the problem we are facing”. In tread with the tradition of the party, participant 5 (R) furthermore said:

“I would say that redistribution is much more important than growth, because there are many people who need a better economy in the world. But it must, to a greater extent, happen through redistribution and to a lesser extent trough growth”.

In addition, participant 5 (R) said “I think there should be a way to move some of the costs [related to CCS] onto those who are actually responsible for large emissions”. Furthermore, the aspect of justice was mentioned by all the participants within the systemic change narrative (R, Spire, FIVH), and when I asked participant 5 (R) if they thought it would be possible to reach our climate goals without using CCS, she replied:

“In Norway, yes. But the problems we face are somewhat bigger than the carbon capture and storage debate, because Norwegian oil and gas production is based on the export of fossil-based energy that is burned elsewhere. And you can’t avoid that problem”.

In relation to the aspect of justice, which is central within the organizations Spire and FIVH (participant 7, Spire and 15, FIVH), participant 7 (Spire) stated that a positive side of CCS is

that Norway can take responsibility for its negative contributions to the current crisis. Moreover, Norway has a responsibility to address climate change and compared to other climate measures led by Norway, such as the rainforest initiative where the burden is placed on other countries and their populations, CCS place the burden on Norway. Participant 7 (Spire) did, moreover, acknowledge that there are potential future issues with CCS, such as placing the burden on future generations and the possibility of accidents related to the long-time storage of carbon. Ultimately, the participant stated that the current narrative on CCS affects the level of ambition within Norwegian as well as international climate policy (participant 7, Spire).

Both the participant from Spire and FIVH (7, 15) stated that CCS, and technological solutions in general, are outside their organizational framework. Their main focus is on changing consumption patterns and promoting global, just transitions. However, participant 7 (Spire) criticized how CCS has been used as an excuse to postpone real emission reduction and to justify continued oil production. In relation to this, the problematic connection between CCS and the oil industry was also highlighted, and according to her, it is obvious that the focus on CCS is in the oil industry's favour. She continued her reflection by saying that CCS, until now, has been used to get more money out of projects, which makes the current transition of CCS into a climate solution highly problematic. Accordingly, within Spire, CCS is seen as a green resting pillow. Participant 15 (FIVH) agreed on this and stated that CCS is problematic to the extent that it legitimizes bad practice and can be seen as extending the oil era and greenwashing. Furthermore, participant 7 (Spire) noted that the IPCC report include several scenarios that focus on CCS, and accordingly, technological development on CCS is expected to increase. Participant 7 (Spire) hope, moreover, that the Longship project, currently underway, will work as planned as we now have made ourselves reliant on its success. Therefore, she emphasized that it will be very problematic if this project turns out not to work. Moreover, she noted that it is important to look at who benefits from the focus being turned away from real emission cuts and onto CCS (participant 7, Spire).

When I asked participant 7 (Spire) about their stand on CCS within hard-to-abate industries, she replied that this could be an argument for why we need this technology, as CCS on industries such as cement production can cut emissions drastically. However, she highlighted that to solve the environmental crisis, we must address consumption patterns and the system as a whole. Using CCS on cement production could, moreover, compensate for huge consumption quantities. Additionally, participant 7 (Spire) pointed out that the environmental impact of

concrete goes beyond emissions in that it also affects resource depletion. As a solution, participant 7 stated that Spire wants to move beyond having growth as the main goal and towards a circular society. According to her, we should strive towards maintaining human welfare as well as the nature's tolerance limits, and growth does not necessarily mean higher welfare to more people. Participant 15 (FIVH) echoed this and said that CCS is necessary, but not unproblematic. The need for a systemic change is also prominent through the participants view on the green transition in Norway. Participant 5 (R) stated that there is an urgent need for emission reduction, but that the green transition has been misused extensively. Moreover, she stated:

“The green shift has become a wrapping and an excuse for a great deal of commercial activity. The green transition has become the greedy transition (...) If there is to be a green transition, it must be a transition and not just more of everything”.

Participant 4 (Greenpeace) did also emphasize that the green transition must involve phasing out one thing and replacing it with something else, which imply that views within the ‘systemic change’ narrative and the ‘greenwash’ narrative are overlapping. Participant 7 (Spire) stated that their main focus is to work for a world that is sustainable and just, and as an environmental organization they see the aim for change and the willingness to reduce the impact on the environment as something positive. However, managing to do this through just processes is central as the green transition can affect people negatively. Participant 15 (FIVH) commented on the green transition that:

“If we look at emissions through the consumption lens, then we look at the footprint of Norwegian's economic activities further down the value chain. And then the electric car goes from being a zero-emission technology, in practice, to being something completely different, because it has emissions from the production which takes place in other parts of the world”.

In addition, participant 15 (FIVH) said that the green transition must include elimination of emissions worldwide as well as in Norway. Moreover, he stated that:

“We experience that when we talk about the green transition, we are talking about justice within the framework of a fairly large-scale social upheaval. While perhaps some of the political parties that use the term ‘just transition’ talk about ‘just transition’ as limitations on how big a transition should be. We must slow down the phasing out of fossil technologies, for instance, because we

must have justice. We must slow down phasing out the oil and gas industry, because we must have justice. We have another focus, which is that we must speed up the alternatives and take care of people in other ways than by extending the emission-practice” (participant 15, FIVH).

Ultimately, all three participants within the systemic change narrative acknowledge that there may be some positive aspects in relation to CCS and hope that it succeeds in relation to the level of commitment. However, they are also critical towards ways in which CCS can legitimize oil and gas production and draw the attention away from changing consumption patterns. Accordingly, they promote other solutions when it comes to fighting climate change. The next two sub-chapters will take a brief look at how the three presented narratives have changed over time as well as identify some examples of perceptions various actors have of each other.

5.6 Has these narratives changed over time?

All participants were asked questions about their view on CCS, if this view had changed over the years, and if specific events or incidents had affected their view on this technology. Most of the participants said that their view for the most part had been the same (Zero, Bellona, H, FrP, V, MDG, KrF, Ap, Sp, Heidelberg Materials), while participant 4 said that Greenpeace always have been critical. They are, however, not as critical towards CCS in hard-to-abate industries. They are principle against it, but it is not the main fight. The participants from Spire and FIVH (7, 14) were critical towards some aspects of CCS but said that technological solutions were not within their framework. Participant 7 (Spire) did additionally state that they first got a resolution on CCS in 2021. Participant 5 (R) did, moreover, say that they started out as critical but have moved towards a low degree of optimism. They are still critical towards some aspects, but it is not as “science fiction” anymore since projects are now being realised. The participants representing Equinor, Hafslund Oslo Celsio, and Heidelberg Materials said that they always have been positive towards CCS. Common for all of them is the business-related view on CCS as a possibility to continue their production. They can, for instance, offer CO₂-neutral gas, cement, and waste management. This could, moreover, give them major benefits if this is what the market demands in the future.

Many of the participants brought up ‘the Norwegian moon landing’ as a time in history where the view on CCS was weakened. Participant 2 (Bellona), representing an organization that has worked with CCS for a long time, said that the work was much harder after the project at Mongstad failed. Some of the participants did also emphasize that CCS has not been discussed

much until recently. We have been using CCS for a long time on the two oil fields Snøhvit and Sleipner, but the change of focus towards hard-to-abate-industries made the work much easier (participant 1, Zero). Recently Melkøya has been a much-debated topic in Norway. Melkøya is the LNG gas facility operated by Equinor situated outside Troms and Finnmark county in northern Norway. Through the last couple of years, the plan has been to decarbonise the facility by setting up an electricity supply from land. Bellona has been critical to this plan and have suggested the use of CSS instead. The government did recently turn and is now suggesting CCS on Melkøya, because electrifying the facility would take all the energy surplus in Troms and Finnmark and hinder energy supply to other industries situated on land (participant 2, Bellona). Many of the participants (Zero, Bellona, Greenpeace, Equinor) did also compare Norway to Germany where the difference in the level of trust we have in CCS is astonishing. Germany has been much more sceptical towards leakages for instance as opposed to Norway. Some of the participants suggests that we are less sceptical because we have an oil and gas industry which have a high degree of knowledge within this field. Ultimately, the view on CCS in Norway has developed over time, but most of the participants has gone from positive to more positive.

6.0 Discussion

This chapter will discuss the findings presented in the previous chapter through applying theory and answer the formulated research questions. The first sub-chapter will attempt to answer the first research question as well as sub-research question, while the second sub-chapter will try to answer the second research question. The findings presented in chapter 5 substantiates the identified narratives and some selected aspects will furthermore be discussed in this chapter.

6.1 The view on CCS in Norway

To investigate the views on CCS in Norway the following research question was formulated: *Are Carbon Capture and Storage (CCS) in Norway mainly viewed as a positive innovation or are there prominent critical views?* To be able to identify the contributing factors of this particular division, a sub-research question was formulated: *What could be underlying factors contributing to the division of opinions within this topic?* Through the narrative analysis, five main narratives holding various, as well as contrasting, views on CCS have been identified. Going further, I will discuss the findings and answer the research questions presented above.

6.1.1 The ‘win-win’ narrative, the ‘maintaining our everyday life’ narrative and the ‘avoiding energy crisis’ narrative

The biophysical discourse can be seen as the overarching discourse of the ‘win-win’ narrative, the ‘maintaining our everyday life’ narrative, and the ‘avoiding energy crisis’ narrative. All three narratives emphasize that climate change is a prominent environmental problem caused by human activities and that we need to reduce greenhouse gases to avoid catastrophe. Another prominent aspect connecting these narratives to the biophysical discourse is the promotion of technological measures and policy interventions to solve the climate crisis, referred to as a techno-managerial approach by Leichenko & O’Brian (2019). According to the authors, the technical aspect includes development of renewable energy and energy efficiency. Within the ‘win-win’ narrative this is visible through the promotion of various climate measures, where renewable energy is crucial (Zero, Bellona, H, Hafslund Oslo Celsio, V, MDG, KrF, Ap). Moreover, all three narratives emphasize energy efficiency as an important climate action in Norway. The managerial aspect, moreover, could involve regulations limiting emissions from power plants (Leichenko & O’Brien, 2019). Another central characteristic of the biophysical discourse is that greater scientific knowledge will promote the actions and interventions needed. Leichenko & O’Brian (2019) point to the IPCC reports as an example, which is central within all the three narratives. Multiple participants (Zero, Bellona, Hafslund Oslo Celsio) mentioned science and the IPCC reports explicitly as an important influence on their views on climate change and possible solutions. Moreover, the biophysical discourse is an approach to scientific knowledge that focuses on positivist science as physical processes are seen through an objective lens. Accordingly, the ‘win-win’ narrative, the ‘maintaining our everyday life’ narrative, and the ‘avoiding energy crisis’ narrative are in line with the biophysical discourse.

The biophysical discourse does, however, also emphasize the role of individual behavioural changes, such as riding a bike instead of driving a car (Leichenko & O’Brian, 2019). Participant 2 (Bellona,) for instance, stated that they do not focus on people's choices and see it as an irresponsible plan A, as most of the emissions produced by people are produced within the industry. He did, however, say that the choices people make are important, but that it is outside their scope (participant 2, Bellona). This statement might show a deviation from the biophysical discourse as individual behavioral change is not prioritized. Moreover, this statement makes me also question the logic. If the emissions produced by people is produced within the industry, a prominent solution would be to reduce the consumption leading to these emissions as well as changing systems upholding this trend. This aspect seems to be of minor importance for

participant 2 (Bellona) and I believe that this can be traced back to the aspect of realism and that it is not realistic to go through with major societal changes within the given timeframe. According to participant 2 (Bellona), CCS is therefore needed to limit emissions. Other participants within this narrative (Zero, Hafslund Oslo Celsio, V, MDG, Ap,) did, however, emphasized the need for individual behavioral changes and systemic measures.

In relation to technological versus individual measures, participant 15 (FIVH) referred to a study conducted by SIFO²⁰ that explored beliefs related to solving the climate crisis through technological solutions or reducing consumption, among people in Norway. The study looked at environmental attitudes among Norwegian consumers and possible changes within this field between 1993 and 2012. The findings from the study shows that “throughout the period, confidence in consumers’ ability to influence producers (consumer power) have been higher than technology optimism” (Tangeland, 2013, p. 33). Nevertheless, the presented results show that this division of thought has, and probably still is, changing. Accordingly, technology optimism has increased while the view on consumers’ ability to influence developments has decreased over time (Tangeland, 2013). Furthermore, Tangeland (2013, p. 11) defines technology optimism as “the belief that new technology will mean that [people] can maintain their consumption at current levels while the negative impacts on the environment and climate goes down”. This definition connects technology optimism directly to the ‘maintaining our everyday life’ narrative and the field of eco-modernism.

Eco-modernism

The main thought within the ‘win-win’ narrative, the ‘maintaining our everyday life’ narrative, and the ‘avoiding energy crisis’ narrative are that it is impossible to tackle climate change without using CCS. There are some variations, however, where the ‘maintaining our everyday life’ narrative additionally sees CCS as crucial to attain the lifestyles we have today and the ‘avoiding energy crisis’ narrative expresses that we need CCS to uphold the access to energy. Moreover, these narratives consist of actors that are positive towards technological solutions which can be understood as reflecting a view close to eco-modernism. Within eco-modernism, technology is seen as a key component to stabilize the climate, protect the nature, and at the same time make life better for people. Furthermore, the key to a green transition is to decouple growth from environmental impact. If these aspects are separated, we can maintain our

²⁰ The State’s institute for consumer research (Statens institutt for forbruksforskning, SIFO).

everyday life *and* avoid the crisis from expanding (Asafu-Adjaye et al., 2015). As already mentioned, these aspects are prominent within the three narratives, and is often referred to as green growth.

According to Asafu-Adjaye et al. (2015, p. 6) a central aspect within eco-modernism is to combine economic modernization and environmental protection, and together “they allow people to mitigate climate change, to spare nature, and to alleviate global poverty”. The aspect of justice was central within the ‘maintaining our everyday life’ narrative and the ‘avoiding energy crisis’ narrative. Participant 8 (FrP), within the ‘maintaining our everyday life’ narrative, did for instance emphasize that millions of people lack access to energy and that we therefore have a responsibility to

Furthermore, participant 15 (Sp), echoed by participant 8 (FrP), stated that CCS is important in relation to maintaining our everyday life. Moreover, he argued that most people are not interested in changing their lives or level of welfare. Through this statement he is implicitly saying that a systemic change will imply both. A similar view is also emphasized by Phillips (2015, referred to in Robbins, 2020b) who argues that the field of degrowth is unsuited to tackle climate change as most people want to improve the quality of their lives, which requires new technology as well as increased and more efficient production. Kallis (2018), who promotes degrowth, emphasizes that the degrowth movement aim for a downscaling of production and consumption which also will *increase* the well-being of humans and the environment. Moreover, this cannot be compared to economic recession, as both FrP and Sp implies, as such processes are seen as involuntary within a growth-based system. Accordingly, he argues that downscaling through a degrowth lens is a matter of choice. Interestingly these actors hold opposite understandings of what a systemic change implies, which again verifies that the ‘greenwash’ narrative is a counternarrative of the pro-CCS narratives.

This can also be seen in relation to the ‘avoiding energy crisis’ narrative and the statement given by participant 11 (Equinor) that she does not think that the option is green, clean energy, but rather continuing with the same grey energy. Moreover, the war in Ukraine was used as an example for why this view have increased during the past year. Participant 1 (Zero), however, was the only participant within the technology optimism group that was critical towards the term ‘energy crisis’. She said that it is embarrassing to see how Norway builds out new licences based on the argument that we must supply Europe with electricity. Røttereng (2017) argues

that the degree of CCS-support within a country should be viewed as a strategic hunt for solutions in a two-levelled game. The authors findings shows that the support of CCS within a country correlates with having an interest in the petroleum industry and ambitions of climate cooperation on a global level. Furthermore, Røttereng (2017) argues that countries within this position search for solutions that fits their national agenda and which at the same time fulfils the international demands to battle climate change. This statement could accordingly be applicable for Norway as both aspects coincide with our interests and activities. Additionally, this study implies that the focus on CCS in Norway is based on our fossil-related self-interest. It is, however, fairly obvious that Equinor, an international energy company, would promote solutions that help keep the company profits high.

Participants

The fact that technology optimism is an increasing view within Norwegian society corresponds with the findings of my research project. More than half of the participants are placed within the ‘win-win’ narrative (Zero, Bellona, H, Hafslund Oslo Celsio, V, MDG, KrF, Ap, Heidelberg Materials). However, the participants from the ‘maintaining our everyday life’ narrative (FrP, Sp) and the ‘avoiding energy crisis narrative’ (Equinor) are also emphasizing technological solutions and are therefore placed with the biophysical discourse and the field of eco-modernism as well. When the participants from these narratives are included, twelve out of sixteen participants can be connected to the technology optimism view. This involves all except one political party, both the environmental foundations, and all the CCS-related companies.

Furthermore, it was expected that all the CCS-related companies were placed within pro-CCS narratives. Accordingly, they were distributed between the ‘win-win’ narrative (Hafslund Oslo Celsio, Heidelberg Materials) and the ‘avoiding energy crisis’ narrative (Equinor). Hafslund Oslo Celsio and Heidelberg Materials provide services we need now and probably will continue to need in the future. However, some argue that we can find alternatives, like reducing production, recycle all the produced waste, and use other materials than cement for construction. Recycling 100% of our produced waste, however, is extremely difficult and using wood instead of cement, for instance, will also have an impact on nature (participant 6, Hafslund Oslo Celsio and participant 16, Heidelberg Materials). Moreover, we do not have prominent alternatives at this moment, and CCS is therefore often celebrated within these industries. Within the oil and gas industry, however, it is different as we have alternative solutions in renewable energy. Moreover, CCS can be the key for these companies to continue their

production. For now, we need cement and waste management, but there is an increasing understanding of the need to phase out oil and gas. When all comes to all, all three are companies where making their business profitable is the main goal. An incentive could also be the demand for CO₂ neutral waste management, cement, and energy in the future.

Zero and Bellona are the only participants representing the environmental organisations within the ‘win-win’ narrative and the biophysical discourse. The reason might be that Zero and Bellona differs from the other organisations as they are environmental foundations. The difference between environmental organisations and environmental foundations can be prominent through their structure and source of funding. Zero and Bellona are, among others, financially supported by the private sector which includes big corporations with certain interests (Zero, s.a.; Bellona, s.a.) The environmental organisations are, moreover, often member based and get their main income through member fees and donations. Greenpeace are principally not receiving any money from companies or states, just from individuals or foundations (Greenpeace, s.a.). The structuring of the environmental organizations does accordingly explain their positioning within CCS in Norway.

To sum up this sub-chapter the findings and the background on CCS in Norway presented in chapter 2 shows that the ‘win-win’ narrative, which promotes technical solutions and emphasize the competitive advantage Norway has in relation to CCS, is the narrative that influence policies and practices the most. Accordingly, this narrative can be seen as part of a leading discourse (Benjaminsen & Svarstad, 2021). Leichenko & O’Brian (2019) states, moreover, that the biophysical discourse is the most common discourse on climate change, which again can substantiate this claim. This would, however, also include the ‘maintaining our everyday life’ narrative and the ‘energy crisis’ narrative because they are placed in under the biophysical discourse as well. Moreover, the number of participants within all three pro-CCS narratives suggests that CCS is mainly viewed as a positive innovation in Norway. I will now move on to the ‘greenwash’ narrative.

6.1.2 The ‘greenwash’ narrative

The critical discourse, which understands climate change as a social problem, can be seen as the overarching discourse of the ‘greenwash’ narrative. Participant 4 (Greenpeace) can, furthermore, be placed within the critical discourse as the organization he represents confronts the status quo and especially the vested interest in particular forms of development such as the

oil and gas industry in Norway (Leichenko & O'Brian, 2019). Within the 'greenwash' narrative CCS is, descriptively enough, seen as a greenwashing manoeuvre through which Equinor can legitimize their oil and gas production. Accordingly, the 'greenwash' narrative can be understood as a counternarrative (Roe, 1991) as it challenges the dominant 'win-win' narrative through proposing contrasting solutions to tackle climate change. This is prominent through how the biophysical discourse emphasizes technological, behavioural, and policy changes to tackle climate change, where the critical discourse draws attention to root causes of vulnerability and risk. The discourses have, moreover, opposite understandings of science where the biophysical discourse emphasizes positivist science and the critical discourse uses social theory to critique the current societal structures (Leichenko & O'Brian, 2019).

Participant 4 (Greenpeace) questions the status quo in relation to the widespread view on CCS as climate change mitigation measure in Norway. Moreover, he finds this strange as the scientific foundation for CCS is thin and because the technology has not been proven to work. On the contrary, participant 11 (Equinor) stated that "[CCS] is among the least challenging technologies we have today, something we actually can start using". In addition, she stated that Northern Lights will start their operations next year which again shows that CCS is way ahead of other initiatives. On the 26th of April this year, however, a news article was published on the progression on the CCS project on the waste management facility on Klemetsrud, operated by Hafslund Oslo Celsio. The article stated that the CCS facility is in risk of never being completed due to geopolitical conditions, inflation, and reduced exchange rate which burst the budget a year after the project was initiated (Juven et al., 2023). Although the delay is caused by other factors than uncertainties in the technology, there can accordingly be problems related to the various components needed. Furthermore, related to the widespread view on CCS in Norway, participant 4 (Greenpeace) stated that we focus on CCS in Norway is because those in power want to maintain the fossil fuel industry. He continues his argument by pointing towards Finland where the media promote biofuels as the future because they have a powerful forestry industry. Moreover, we have a powerful gas industry and is therefore focusing on CCS. Once more, it is applicable to mention the study conducted by Røttereng (2017) arguing that the support of CCS within a country correlates with having an interest in the petroleum industry and ambitions of climate cooperation on a global level. Taking this study into account, participant 4 (Greenpeace) may have a valid point and the support for CCS might be linked to the vested interests in the fossil fuel industry rather than its applicability. Additionally, this can

also be seen through Norway's dominant support to REDD as a climate solution which also can be linked to Norway being an oil and gas producer (Benjaminsen & Svarstad, 2021).

According to Leichenko & O'Brian (2019) the critical discourse is more political than the biophysical discourse as it emphasizes "individual and collective capacities to challenge and transform current economic and social development trajectories" (Leichenko & O'Brian, 2019, p. 48). As mentioned in the sub-chapter above, Greenpeace are independent from political and commercial interests, and they do not receive money from companies or countries which, according to themselves, gives them "the authority needed to confront powerful actors" (Greenpeace, s.a.). This example shows how Greenpeace position themselves on the opposite side of Zero and Bellona, who cooperate with companies and the industry. Seen from a broader perspective, this correlates with their positioning within the biophysical discourse and the critical discourse as Zero and Bellona see the industry as a key actor to develop realistic solutions, and where Greenpeace accuses the same industry of preventing a sustainable transition and maintaining the fossil fuel industry that drives climate change. Accordingly, participant 4 (Greenpeace) sees Equinor, supported by LO and NHO, as villains that promote CCS to continue their oil and gas production.

Degrowth

The views identified within the 'greenwash' narrative correspond with the views within the field of degrowth. According to Kallis (2018), degrowth can be understood as a downscaling of production and consumption which at the same time improves human well-being and environmental conditions. This view of

A central aspect is also that this process will lead to a more equal distribution of human welfare.

The degrowth movement is also critical towards technology, and especially technology at scale (Robbins, 2020a). CCS is without doubt a technology applied at a big scale, and the sceptics within the 'greenwash' narrative lines up with this as well. Accordingly, Robbins (2020a) relate degrowth to the phrase 'less is more'. Moreover, he pointed towards renewable energy as an alternative, which accordingly can solve the current challenges in a "cheaper, simpler, and safer way". The degrowth movement are, as earlier mentioned, connected to the southern European version of political ecology which is more connected to activism and socio-environmental transformation (Benjaminsen & Svarstad, 2021). Participant 4 (Greenpeace) emphasized that activism was a central part of the means promoted by Greenpeace, which again can connect

them to the degrowth movement. However, participant 4 (Greenpeace) stated that it is unclear to him how they can work towards degrowth and said that it is easier for Greenpeace to work towards certain projects. He did although state that degrowth is essentially what they are working towards.

Gómez-Baggethun (2020) has also criticized eco-modernism and argues that the technological utopia of modernism is just reinforcing the status quo and promoting false solutions to tackle climate change. This point of view can, furthermore, be understood as ‘green growth’ which, according to the author, is the main response to climate change advocated by the European Union, United Nations, and the World Bank, among others. Phillips (2015, referred to in Robbins, 2020b, p. 3) expresses his scepticism towards austerity thinking such as degrowth which, according to him, “may require action at a far greater scale than the slow energy transition has mustered to date”. Moreover, he states that the field of degrowth is improper to tackle climate change. Most people are interested in improving the quality of their lives, which requires technology intelligence as well as increased and efficient production.

The participant

Participant 4 (Greenpeace) is the only actor placed within the ‘greenwash’ narrative as Greenpeace is the only actor that unrelentingly refers to CCS as a greenwash. Other participants did, however, acknowledge the possibility of greenwashing (R, Spire, FIVH). These participants are all placed within the ‘systemic change’ narrative, which have several overlapping views with the ‘greenwash’ narrative.

To sum up the ‘greenwash’ narrative, participant 4 (Greenpeace) emphasized that they have a clear critical position on the use of CCS in Norway, but they focus on demonstrations towards new oil fields rather than towards the use of CCS specifically. Accordingly, there is a resounding critical voice against CCS in Norway, but I would not call it prominent in comparison to the pro-CCS narratives. This is based on the focus Greenpeace has assigned to CCS, which is not expressed as a separate focus area but rather implicitly through the fight against the fossil fuel industry and search for new oil fields (participant 4, Greenpeace). Ultimately, I will discuss the ‘systemic change’ narrative.

6.1.3 The ‘systemic change’ narrative

The ‘systemic change’ narrative can be seen in relation to the critical discourse and the profligacy discourse as this narrative criticize the current systems and understands over-consumption to be the main driver of climate change (Leichenko & O’Brian, 2019; Adger et al., 2001). Within the ‘systemic change’ narrative alternative systemic-based climate mitigation measures are preferred over technical solutions such as CCS. The scepticisms towards technical solutions are also prominent within this narrative.

There is, however, a division within the ‘systemic change’ narrative as participant 5 (R) essentially can be placed within the critical discourse whereas participant 7 (Spire) and participant 15 (FIVH) can be placed within both but have prominent views that correlate with the profligacy discourse. Again, it is important to emphasize that narratives overlap so the intent of this division is to inform rather than drawing lines (Leichenko & O’Brian, 2019). The views within the ‘systemic change’ narrative and the ‘greenwash’ narrative, however, are overlapping. Accordingly, participant 4 (Greenpeace) and 5 (R) both states that the green transition must involve phasing out one thing and replacing it with something else. Moreover, they both emphasize that this is a transition and not a case of doing something in addition.

The study conducted by Tangeland (2013) that explored believes related to solving the climate crisis through technological solutions or reducing consumption, concluded with the latter being the highest among the participants within the study. Participant 15 (FIVH) referred to this study and stated that the difference between the center of gravity of Norwegian politics, which he placed within the technology optimism field, and people’s opinion, is astonishing. Nevertheless, the result shows that this division of thought has, and probably still is, changing. Accordingly, technology optimism is increasing while the view on consumers’ ability to influence developments has decreased over time (Tangeland, 2013).

Climate justice

The ‘systemic change’ narrative is related to the aspect of climate justice as the participants within this narrative (R, Spire, FIVH) see this as foundational within their work. The field of climate justice is especially prominent within the environmental organisations Spire and FIVH. The Red Party (R) emphasize redistribution of wealth and resources but is also focusing on implementing a just transition in Norway and in the world as such. Accordingly, she mentioned

the current situation on Melkøya²¹ and how CCS, in this case, can be considered as more just than the planned electrification (participant 5, R). Spire works towards climate justice both nationally and internationally. Nationally in the way that the green transition must be done in a just way in Norway, and internationally through that Norway must take their historical responsibility. Moreover, a current example on Norway is how the state introduces climate measures that violate the rights of indigenous people by creating wind parks in reindeer herder territories which disrupts their basis of life. Such examples are prominent all over the world and, accordingly, the green transition can be used as an excuse to conduct human rights violations (participant 7, Spire). Today, transformation to sustainability is often promoted through green transitions, but climate activists have also pointed at tensions between development-as-usual, equity and sustainability, emphasising the need for just transitions (Leichenko & O'Brien, 2019).

Participants

The three remaining participants namely participant 5 (R), participant 7 (Spire), and participant 15 (FIVH) are placed within the 'system change' narrative. Participant 5 (R) was the hardest participant to place within the three presented narratives as the participant acknowledges some benefits with CCS, criticized it for being a solely technological solution, and additionally expressed the need for other alternatives. Accordingly, participant 5 (R) somehow fits within all the presented narratives. Her focus area is, however, broader than a focus on a system- and consumption change, which characterize the main view of participant 7 and 15 (Spire, FIVH). However, participant 5 (R) is concerned with distribution of wealth and resources. The next sub-chapter will discuss the findings in relation to the second formulated research question.

6.2 The use of discursive power through narratives

To investigate the aspect of discursive power in relation to narratives on CCS in Norway a second research question was formulated: *How is discursive power exercised in relation to CCS in Norway?* In this sub-chapter I will discuss the use of discursive power in some of the identified narratives on CCS in Norway. Through analyzing the findings, discursive power can be most prominent within the 'win-win' narrative and the 'avoiding energy crisis' narrative.

²¹ An LNG facility outside Hammerfest in the state Troms and Finnmark.

6.2.1 The ‘win-win’ narrative

Discursive power can be exercised through the ‘win-win’ narrative. Firstly, this narrative is promoted by all the political parties except the Red Party (R) and by all the CCS-related companies, which are powerful actors within Norwegian politics. Leichenko & O’Brian (2019, p. 52) stated that “the power of discourses often lies in their ability to define the terms of the argument through a language and logic that appeals to and gains support from others”. Accordingly, this can be applied to the actors within this narrative. Secondly, discursive power can be prominent through the *more of everything* aspect within the ‘win-win’ narrative. As pointed out in the analysis, the time constrain which this narrative is based upon, can be seen as a crisis narrative. However, this crisis is unquestionable as the limited time-aspect is real and rarely contested (source). The central aspect, however, is how this narrative can be used to promote certain solutions. For instance, companies can take advantage of such narratives and promote a solution that suits them and their financial situation.

Additionally, this narrative can be seen as a crisis narrative (Roe, 1995). According to Roe (?), a crisis narrative can be defined as a... and can be used to exercise power. In this case, drawing a line where disaster awaits, could give powerful actors room for action. Accordingly, the government or influential corporations could promote certain climate measures that suits their preferences or interests because we will need all available measures to assure a viable future. Moreover, there are some descriptive examples from history as, for instance, the power exercised by the Christian church in the Middle Ages. During this period the Church required absolute obedience and people could choose between following God or following the devil. However, if someone disobeyed God, the person was excluded from salvation and from the Christian society. Accordingly, the Church ruled over people with ideological power by controlling their faith, thoughts, and ideas. This method worked because people believed in the Christian message, and through “creating” certain worldviews and rules, the Church could exercise power. Furthermore, fear was a central aspect in getting people to follow their lead (source). This example might seem extreme, but the principles are the same as within other crisis narratives. However, this moves into another concept of power called governmentality (Benjaminsen & Svarstad, 2021). This power aspect is prominent in Norway as climate measures such as biking instead of driving to work is promoted, but at the same time there is a lack of critical viewpoints on green growth for instance.

It is important to bear the dilemma within political ecology in mind, presented by Benjaminsen & Svarstad (2021). Should political ecology focus on criticism or on suggesting solutions? It could be relevant to ask oneself if criticism is useful if it cast doubt on, or halt mitigation actions? The time constrain is proven at a high confidence rate as well as the probability of considering all possible solutions (IPCC?), why is the promotion of this narrative a bad thing then? It is a stated truth, we need to act, and we need to act fast. I would argue that it is indispensable to reveal how these crisis narratives can be misused. Moreover, I would argue that such revelations are especially crucial when it comes to an overwhelming situation as global climate change.

There could be one aspect of discursive power within the aspect of *competitive advantage* as well. I would argue that the focus on ‘Norway as a rich country with the possibility of finding a solution that can be exported to the entire world’ should be considered through a decolonial lens. This creates ‘we’ and ‘them’ and maintains a colonial view. Are people all around the world interested in our solution? Is it the best option available? Or are we eager to export this idea to legitimize the use of fossil fuels? Moreover, this is also portraying the intersection described by Svarstad & Benjaminsen (2021), with political ecology as a criticism tool, but also as a tool for creating a sustainable future, as we find ourselves in a point in time where we need to act.

Most of the political parties, including the largest ones, Ap and H, are placed within the ‘win-win’ narrative. Moreover, these parties are then actors with power. Political parties have some main pillar when it comes to their positioning within various topics. However, there is a balance where they might adapt their opinions to receive votes, which is their highest priority. Accordingly, the voters can also exercise power through steering the political parties towards prominent public opinions

6.2.2 The ‘maintaining our everyday life’ narrative

When powerful actors state that the positive thing about CCS is that we can maintain our everyday life, this could also trigger concern. Probably not enough to call it a crisis narrative, but maybe enough to make some people fear for their current standard of living. Accordingly, when systemic changes are compared to reduction of welfare and “going back to the stone age” it could imply a change towards something worse, and that we would have to give up on our current standards and, furthermore, ways of living a ‘good’ life (participant 13, Sp and

participant 6, Hafslund Oslo Celsio). When this narrative is promoted by powerful actors such as political parties it could be understood as form of discursive power as such narratives could enforce negative associations of systemic change and, moreover, in extreme cases, hinder climate change. This is, however, not prominent within the ‘maintaining our life’ narrative, or at least not through my findings. I recently read an article that stated that one in four Norwegians are sceptical towards climate change. Moreover, among people that vote for the Progress Party (FrP), only one in three believes that humans have the main responsibility (Delebekk & Flem, 2023). This could imply that the dismissive discourse, which do not recognise climate change as a prominent problem, is increasing in Norway (Leichenko & O’Brian, 2019).

6.2.3 The ‘avoiding energy crisis’ narrative

The ‘avoiding energy crisis’ narrative is also focusing on a crisis which again could create ground for discursive power. The ‘avoiding energy crisis’ narrative is promoted by Equinor which is a powerful and influential state-owned company. As showed in the analysis, Equinor promotes a view where the energy crisis is set side by side with the climate crisis (Equinor). If people get the feeling of an energy crises, which threatens our energy-dependent lifestyles, they might be more positive towards the use of CCS on fossil sources to add to the energy supply, as for example blue hydrogen. However, this narrative was more prominent in the document analysis, than in my interview with Equinor (participant 11, Equinor). However, access to energy is not equally distributed among people and the war in Ukraine has intensified the energy situation (source). Again, it is important to emphasize that even though the crisis is real, it can be used to achieve solutions in line with vested interests.

In my opinion and based on the study conducted by Røttereng (2017), it is undeniable that CCS plays a central role in Norwegian climate policies because of our strong incentive in the oil and gas industry. However, as portrayed in this thesis, the two Norwegian CCS pilot projects are within hard-to-abate-industries and not oil and gas. The fact that we need CCS to cut emissions within these industries is uncontested among political parties, environmental organisations, and CCS-related companies in Norway. However, this can be connected to the aspect of competition advantage within the ‘win-win’ narrative where Norway has the possibility to be a leading actor within CCS. Moreover, participant 1 (Zero) stated that the shift towards CCS in hard-to-abate industries, rather than on fossil sources, made the push towards CCS much easier. Accordingly, CCS within cement and waste management is socially accepted and therefore less controversial.

But let us say that CCS is up and running in some industries, it might be easier to apply it in gas production as well. Blue hydrogen.

The construction of discourses and narratives is a common power mechanism in situations where land and natural resources are contested (Svarstad et al., 2018). Although this statement might refer to situations characterized by conflict, I would say that it can be connected to this topic as well. A common view today, or at least through a climate crisis lens, is that Norwegian oil and gas are contested natural resources. Fossil fuels have accelerated the current climate crisis since the Industrial Revolution, and accordingly some countries have contributed more than others. We need to phase out the fossil fuel industry and move on to sustainable alternatives. On the other hand, the oil industry improved the welfare in Norway and made us one of the richest countries in the world per capita, and therefore people might say that it is an industry worth preserving. Moreover, the interest of continuing the oil and gas industry in Norway today, when fossil fuels are commonly seen as causing human and environmental misery, might affect the stories told in relation to climate change. A prominent example is how Equinor portrays the matter as an energy crisis versus a climate crisis. By doing this, they create doubt in relation to access to energy in the future. Moreover, the term 'just transition' is often used as an argument for increased energy production. Accordingly, we cannot phase out Norwegian oil and gas because a just transition equals access to energy. This shows how the aspect of just transition is seen in two different ways within different narratives.

Again, I must emphasize that these statements cannot be dismissed as being exclusively wrong. Access to energy is one of the UN's 17 sustainable development goals and is seen as an important component to attain a basic standard of living for a broader amount of people. But we must pay attention to the solutions promoted to achieve this goal. Should we continue to increase the standard of living and level of consumption here in Norway because we can produce oil and gas and sell it to other countries, so that we again can increase our welfare with the money we receive? Or should we reduce our consumption and redistribute the goods in a just way, so that more people can achieve a decent level of welfare? For instance, when Statoil (now Equinor) implemented their first CCS project on Snøhvit, the motivation was to avoid the CO₂ tax and to reduce the amount of CO₂ in the gas, in line with the market demand in EU. Accordingly, this CCS project exclusively had commercial motives (Tønnessen, 2021).

6.2.4 The ‘greenwash’ narrative and the ‘systemic change’ narrative

Discursive power is not as noteworthy within the ‘greenwash’ narrative or the ‘systemic change’ narrative. Discursive power is often exercised by powerful actors which fits the ‘win-win’ and the ‘avoiding energy crisis’ narrative promoted by political parties and big corporations. The ‘greenwash’ narrative and the ‘systemic change’ narrative are, however, promoted by international or far-reaching environmental organisations, but they do not have the same economic incentives as political parties or big companies with a clear self-interest. Moreover, the environmental foundations Bellona and Zero are placed in the narratives that exercise discursive power. Although, they do not have the same power as Equinor or political parties, they are collaborating with the industry and thus promoting their visions and vice versa. This positioning gives Bellona and Zero a more powerful position than Greenpeace, Spire and, FIVH.

The ‘greenwash’ narrative and the ‘systemic change’ narrative does not exercise discursive power as they are promoted by environmental organisations with different economic incentives than, for instance, Equinor. Moreover, Svarstad et al. (2018) emphasizes that actor orientation is important, but it does not take uneven impacts from economic and discursive structures into consideration, as structure-based power perspectives would. A neoliberal economic system might provide some actors with a higher degree of power resources than others. The ‘greenwash’ narrative and the ‘systemic change’ narrative do, however, exercise power through demonstrations and protests. For instance, Greenpeace created a campaign against Equinor and their plans on the Wisting platform. Their protests and activation of the local population led Equinor to change their mind and walk away from the project (participant 4, Greenpeace). This can also be understood as a form of actor-oriented power (Benjaminsen & Svarstad, 2021). The actor-oriented power perspective, a central power perspective within political ecology, is connected to discursive power through the logic that people rarely act as passive victims within the mechanisms of discourses (Stern et al., 2015 referred to in Benjaminsen & Svarstad, 2021).

7.0 Conclusion

The aim of this study has been to assess the usefulness of CCS and identify prominent narratives on CCS in Norway as well as the use of discursive power connected to these narratives. This thesis is conducted with an emphasis on the synthesis between realism and social constructivism from the field of political ecology. Examples of realism was presented in chapter 2 which elaborated on the background, history, and current status of CCS in Norway. Furthermore, a framework of social constructivism was presented through the identified narratives and the related discourses. (Benjaminsen & Svarstad, 2021).

To investigate the views on CCS in Norway the following research question was formulated: *Are Carbon Capture and Storage (CCS) in Norway mainly viewed as a positive innovation or are there prominent critical views? (RQ1)* To be able to identify the contributing factors of this particular division, a sub-research question was also formulated: *What could be underlying factors contributing to the division of opinions within this topic? (Sub-RQ1)* Through the conducted narrative analysis, five main narratives holding various, as well as contrasting, views on CCS was identified. In accordance with the main point of view the narratives was labelled the ‘win-win’ narrative, the ‘maintaining our everyday life’ narrative, the ‘avoiding energy crisis’ narrative, the ‘greenwash’ narrative, and the ‘systemic change’ narrative.

Although there are some critical voices, CCS is mostly viewed as a positive innovation in Norway. CCS is for the most part seen as a technology we desperately need to limit greenhouse gases and tackle climate change. Moreover, this view dominates within the political parties as well as the CCS-related companies. When it comes to environmental organisations, however, the landscape is somewhat different. There is a divide between the environmental foundations Bellona and Zero on one side, with their close ties to the industry, and Greenpeace on the other and clearly opposite side, which sees CCS as a greenwash and a false solution. Spire and FIVH, accompanied by the Red Party, are positioned somewhere in between as they acknowledge some positive aspects of CCS, but express prominent concerns. Moreover, Spire and FIVH focus on reducing consumption rather than technical solutions. The underlying factors that contribute to the division of the participants could accordingly be the overarching biophysical discourse, which is the dominating discourse on climate change (Leichenko & O’Brian, 2019). Another factor could be the fact that Norway is an oil nation, and that CCS therefore is a suitable solution when powerful actors, such as Equinor, wants to continue their profitable business.

Moreover, the study conducted by Røttereng (2017) showed that this also could be related to the desire to contribute to climate change solutions on a global level.

To investigate the aspect of discursive power in relation to narratives on CCS in Norway a second research question was made: *How is discursive power exercised in relation to CCS in Norway? (RQ2)*. The findings showed that examples of discursive power can be identified within several narratives, but it was most prominent within the ‘win-win’ narrative and the ‘avoiding energy crisis’ narrative.

There is a prominent technology optimism within Norwegian climate policy, and there are few critical voices. We need this to work, but now, we have seen that CCS on Klemetsrud was way out of budget and might never be completed. This calls for worry. If CCS is not as ready and waterproof as the politicians and companies such as Equinor say, what shall we then do? I would say that we need to lower our expectations towards large-scale technological solutions and include systemic changes to a larger extent. Moreover, if CCS does not work, we need to cut our consumption, and we must do it now. I suggest a combination of these measures in line with the integrative discourse. We need to explore systemic related changes to a higher degree and especially since applying CCS seems to be more difficult than previously assumed.

7.1 Going further

This research project has identified five prominent narratives as well as the overarching climate change discourses in relation to CCS in Norway and some aspects related to power has been investigated. Further research on the----- it could be interesting to look into what the effects of the focus on CCS are within Norwegian Policy and which actors that influence the politics...

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Appendices

Appendix 1: Categorization of narratives - political parties

Partier	Rødt	Ap	SP	MDG	KF	Venstre	Høyre	FiP
For CCS	Et alternativt noen steder, men vi er kritiske	En del av helheten	Helt nødvendig. Konkurransetorinnet er sentralt	Helt nødvendig for å redusere punktutslipp	Teknologi som vi må ha	Helt nødvendig	Veldig positive	Positive, men kostnad er et minus
Nå klimamål uten CCS?	I Norge ja. Men vi eksporterer fossil energi	Nei, må være en del av kabalen	Vi klarer det ikke uten CCS	Ikke sjangs	Nei. Det er i såfall en teoretisk mulighet	Verden når ikke målene uten CCS	Helt umulig	Nødt til å ha CCS
Realisme		Nødt til å se på alle alternativene	Jeg tror langt de færreste av oss vil ha en veldig stor endring i måten vi lever (vare våre på	Vi trenger alle løsninger på plass	Du kan jo stenge med alt som slipper ut i Norge, men innenfor de rammene av samfunnet som vi kjenner i dag, så er ikke det sjans	Vi kan ikke velge. Det har vi ikke tid til	Industrien i Norge i dag er helt nødt til å ha CCS skal de klare å eksistere i fremtiden	Vi må liksom prøve å få til alt. Gir oss muligheten til å opprettholde hverdagen vår som vi har i dag
Konkurransetorinnet	Norge har bedre forutsetninger enn mange andre.	Vi kan være ganske ledende	Norge har store muligheter til å bli verdensledende på CCS	Norge har en mulig stor og viktig rolle å spille (lagring)	Norge har forutsetninger som tilsier at vi bør gå foran	Vi har enorme lagringsmuligheter, så vi har muligheter mange andre ikke har	Norge har mulighet til å faktisk være blant de første innen CCS	Viktig at ddet er et kompetanseprosjekt
Energikrise		Enda mer høyaktuelt å diskutere CCS, og spesielt etter krigen i Ukraina når behovet for energi har økt	Vi trenger mer alt, mer nett, mer produksjon og vi kommer til å trenge mer energifektivisering		Før alt ble forandret med energipriser og en annen energisituasjon		Og nå kan vi jo være enige om at elektrisk kraft begynner etter hvert å bli en knappfaktor	Den største mangelen i dag er jo for eksempel energi. Det er langt over en milliard som ikke har tilgang til energi
Grønnskiving (i forhold til olje og gass)	At du kan forlenge, ha en unnskyldning for å fortsette å produsere ting som uansett blir brent andre steder			Historisk sett har jo det vært en stor sovepute				
Systemendring	Mange trenger bedre økonomi i verden, men det må i større grad skyve via omfordeling og i mindre grad via vekst	Det er helt klart at systemnivået må legges til rette for at vi skal kunne komme i mål med klimaendringene	Ja, det er helt klart. Vi må tenke mer sikklært, vi er nødt til å tenke mye mer bærekraftig i måten vi gjør ting på	Det jeg ser på som den mest grunnleggende systemendringen, er jo en sånn ideologisk endring. Vi må holde oss innenfor planetens tålegrenser				
Retterferdig omstilling	Atså jeg tror jo at det er mulig hvis det finnes politisk vilje til det	Må ha ned vårt overforbruk og tillate at andre har litt vekst	Ja, det må vi ha tro på	Jepp. Det handler om at pengestrømmene fanges opp og fordels ut til alle	Lettere i andre deler av verden enn i Norge. De kan unngå noen av feilene våre	Mye mer retterferdig. Det viktigste er å nå klimamålene, både for oss og utviklingsland	Det er vanskelig. India sier at de har ingen ambisjon om å nå klimamålene "vesten har bestemt"	Retterferdig vildet aldri bli, men vi kan gjøre det retterferdigere

Appendix 2: Categorization of narratives - environmental organizations

Organisasjoner	Bellona	Zero	FIVH	Spire	Greenpeace
For CCS	Kjærevirkdomhet. Helt nødvendig, men har en bakside (kostand og energi)	Kan ikke brukes for å fortsette oljealderen	Nødvendig, men ikke uproblematisk. Ikke vårt fokus	Håper det funker, men det er ikke uproblematisk. Ikke vårt fokus	Motstander. Punktutslipp = kritikk av prinsipiell art
Nå klimamål uten CCS?	Helt umulig	All CO2-håndtering er nødvendig	Nei, men vi når ikke klimamålene uten å redusere forbruket	Det spørres på kort eller lang sikt. Basert på at det skal funke	Ja, det er det jo. Men det krever at vi faser ut produksjonen av olje og gass
Realisme	Uten CCS kreves en revolusjon i energi og produksjon som det er liten sannsynlighet for at man klarer å gjennomføre	Alle tiltakene må rulles ut samtidig. Vi kan ikke vente på noe			
Konkurransefortrinn	Vi har gode forutsetninger	Norge har enormt lagringspotensiale	CCS kan gjøre norsk industri konkurransedyktig	Et argument Norge bruker	
Energikrise	Men det er ikke bare gass som Europa trenger, de trenger også strøm.	Litt flaut å se hvordan Norge profiterer og bruker det som argument, at vi må forsyne Europa med kraft, for å fortsette å bygge ut lisenser		Det her med energikrisens historie da selvfølgelig, som kanskje har blitt ennå et argument for hvorfor man trenger det.	
Grønnvasking (i forhold til olje og gass)			Vi har jobbet en del med grønnvasking, og det å se på virksomheten sin miljøkommunikasjon ut mot forbruker	Det har blitt brukt som et argument for hvorfor man ikke skal gjøre reelle utslippskutt i dag. Så vi ser på det som en slags grønn hvilepute	Det er jo den tydeligste grønnvaskingen som fins
Systemendring	Vi har mye større mulighet til å gjøre raske og nødvendige endringer i industri enn vi har hos den enkelte	Det absolutt systemendring, det er helt klart	Nye måter å dele ting på, forbruke mindre, eller senke behovet for materielt forbruk og fossile utslipp gjennom å samhandle og organisere ting bedre	Vi tror at skal vi løse miljøkrisen så må vi gjøre noe med systemet, vi må gjøre noe med forbruket vårt som en helhet	Degrowth er det vi mener. Det er helt tydelig
Rettferdig omstilling		Zero arbeider for at Norsk politikk skal henge sammen med resten av verden	En rettferdig grønn omstilling er mulig. Det er det vi jobber for	Vi i Spire jobber for en bærekraftig og rettferdig verden	

Appendix 3: Categorization of narratives - CCS-related companies

Bedrifter	Equionor	Celsio	Heildeberg
For CCS	Kjempegod idé	Ekstremt viktig for oss	Avgjørende for samfunnet og utrolig viktig for oss
Nå klimamål uten CCS?	Vi kommer til å trenge alt vi har	Det er mulig, men veldig mye vanskeligere	Nei
Realisme	Jeg tror vi kommer til å trenge alt vi har	Og så er det litt sånn for sent med hele denne debatten, 'skal vi gjøre det eller det'	"Hvis jeg tar på meg en global hatt så er det jo åpenbart at det ikke er mulig"
Konkurransefortrinn	Norge er veldig godt posisjonert og har eksepsjonell kompetanse	Vi kan være et foregangsprosjekt	Vi drar nytte av å være først ute
Energikrise	Og med krigen i Ukraina, og energimangel, så har vi opplevd en liten fast-tracking av endring i opinionen kanskje	Energikrisen styrker vår foretningsmulighet som avfallsbehandler og energiprodusent	
Grønnvasking (i forhold til olje og gass)		Man kan få uheldig lock-in effekter hvis man bare 'ok, nå skal vi fortsette å grave opp kull og bruke olje, så lenge man har CCS'	
Systemendring		Det er veldig viktig for oss at vi ikke skal stå i veien for sirkulærøkonomi, men at vi bidrar med å ta ut noen fraksjoner	
Rettferdig omstilling	Den rettferdige komponenten kommer til å være viktig	Hvis man ser på verdenshistorein så er jo svaret nei da. Men det er mer fokus nå	Vi har ambisjoner om et snittutslipp på 400 kilo per tonn sement på alle våre fabrikker

Appendix 4: Interview guide

Spørsmål

1. Hva mener dere om karbonfangst- og lagring i Norge?
 - Hva er hovedargumentene deres for dette ståstedet?
2. Har deres syn på karbonfangst- og lagring i Norge endret seg opp igjennom årene?
 - Når skjedde denne endringen?
 - Hvorfor skjedde denne endringen?
 - Hva la dere vekt på tidligere?
 - Hva legger dere vekt på nå?
3. Har deres meninger om bruken av karbonfangst- og lagring i Norge blitt påvirket av ytre faktorer og hendelser?
4. Hva tenker dere om å ta i bruk karbonfangst- og lagring innenfor store punktutslipp som sementproduksjon og avfallsforbrenning?
5. Hva tenker dere om å ta i bruk karbonfangst- og lagring innenfor olje- og gassproduksjon?
6. Er det noen fordeler ved å ta i bruk karbonfangst- og lagring i Norge?
7. Er det noen ulemper ved å ta i bruk karbonfangst- og lagring i Norge?

Spørsmål om debatten

8. Hva er deres tanker om debatten rundt karbonfangst- og lagring i Norge?
9. Har dere sett, eller ser dere noen endringer i debatten rundt karbonfangst- og lagring i Norge?
10. Hvilke argumenter opplever dere at brukes av de som er for og de som er imot bruk av karbonfangst- og lagring i Norge?
11. Tenker dere at debatten er balansert, eller er det for eksempel noen stemmer som ikke har blitt hørt?

Det grønne skiftet

12. Hva er deres tanker rundt det grønne skiftet i Norge?
 - Hva er viktige elementer?

13. Hvilken rolle tenker dere at karbonfangst- og lagring bør spille i det grønne skiftet i Norge?
- Hvorfor det?
14. Hvordan jobber dere med å fremme/hindre bruk av karbonfangst- og lagring i Norge?
15. Noen aktører mener at en for stor teknologioptimisme, og da spesielt CCS, kan ta fokuset vekk overgangen til fornybar energi og andre løsninger som forbrukskutt. Hva tenker dere om det?
16. Vil teknologiske løsninger som karbonfangst- og lagring være nok, eller trenger vi også en systemendring?
- Hva bør en eventuell systemendring innebære?
17. Noen aktører mener at økt vekst og verdiskapning er viktig for Norge i fremtiden. hva tenker dere om det?
- Hva er deres tanker om grønn vekst?
18. For å ta i bruk storskala karbonfangst- og lagring i Norge trenger man både materialer og energi. Hvor tenker dere at dette skal komme fra?
19. Tror dere det er mulig å nå klimamålene våre uten å ta i bruk karbonfangst- og lagring i Norge?
20. Tror dere de er mulig å få til en rettferdig grønn omstilling på et globalt nivå? Eventuelt hvordan?

Avslutning

21. Hvis du skulle nevne noen hovedpunkter, hvilke punkter tenker du oppsummerer deres tanker rundt karbonfangst- og lagring i Norge?
22. Er det noe du vil tilføye eller spørre meg om?

Vil du delta i forskningsprosjektet «Det grønne skiftet i Norge. En narrativ analyse av karbonfangst- og lagring»?

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å gjennomføre en narrativ analyse av karbonfangst- og lagring i Norge. I dette skrivet gir jeg deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål

Formålet med dette prosjektet er å utføre en narrativ analyse av karbonfangst- og lagring i Norge. Narrativ analyse er en kvalitativ tilnærming som undersøker sosiale prosesser og hvordan folk bruker narrativer (fortellinger) til å konstruere mening, forståelse og orden. Denne tilnærmingen vil gi et innblikk i hvordan ulike aktører og interesser bidrar til, og skaper, ulike narrativ om karbonfangst- og lagring i Norge. Dette intervjuet vil inngå i datamaterialet til min masteroppgave.

Hvem er ansvarlig for forskningsprosjektet?

Norges Miljø- og Biovitenskapelige Universitet er ansvarlig for dette forskningsprosjektet.

Hvorfor får du spørsmål om å delta?

Utvalget er hentet ut blant personer som tilhører et politisk parti/organisasjon/firma med kunnskap innenfor, og meninger om karbonfangst- og lagring. Jeg antar at et maksantall på 15 personer vil bli intervjuet til dette prosjektet.

Hva innebærer det for deg å delta?

Hvis du velger å delta i prosjektet, innebærer det å delta i et personlig, semi-strukturert intervju. Det vil ta deg ca. 45-60 minutter. Intervjuet vil inneholde spørsmål om ditt parti/organisasjon/firma sitt syn på, og forståelse av, karbonfangst- og lagring i Norge, syn på debatten i Norge, samt tanker om det grønne skiftet i Norge generelt. Intervjuet vil tas opp på lydopptak samtidig som det kan bli tatt notater.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle dine personopplysninger vil da bli slettet. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Jeg vil bare bruke opplysningene om deg til formålene jeg har fortalt om i dette skrivet. Jeg behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

- Det er kun veilederen min og meg som vil ha tilgang til dine opplysninger ved behandlingsansvarlig institusjon.
- Navnet og kontaktopplysningene dine vil jeg erstatte med en kode som lagres på egen navneliste adskilt fra øvrige data.

Tilhørighet til politisk parti/organisasjon/firma vil publiseres i oppgaven. Navn kan publiseres hvis det er ønskelig, men det er ikke nødvendig. Hvis du ønsker å bli helt anonymisert er det helt i orden.

Hva skjer med personopplysningene dine når forskningsprosjektet avsluttes?

Prosjektet vil etter planen avsluttes 15. mai 2023. Etter prosjektslutt vil datamaterialet med dine personopplysninger arkiveres for en kort periode for eventuell videre forskning.

- Datamaterialet skal lagres ved behandlingsansvarlig institusjon.
- Ingen andre enn meg (Erika Amlie Amundsen) vil ha tilgang til datamaterialet.
- Datamaterialet anonymiseres når oppgaven er levert inn 15. mai 2023.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra Norges Miljø- og Biovitenskapelige Universitet har Sikt – Kunnskapssektorens tjenesteleverandørs personverntjenester vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Dine rettigheter

Så lenge du kan identifiseres i datamaterialet, har du rett til:

Innsyn i hvilke opplysninger vi behandler om deg, og å få utlevert en kopi av opplysningene.

- Å få rettet opplysninger om deg som er feil eller misvisende.
- Å få slettet personopplysninger om deg.
- Å sende klage til Datatilsynet om behandlingen av dine personopplysninger.

Hvis du har spørsmål til studien, eller ønsker å vite mer om eller benytte deg av dine rettigheter, ta kontakt med:

- Norges Miljø- og Biovitenskapelige Universitet ved
 - Erika Amlie Amundsen (student)
 - Epost: erika.amlie.amundsen@nmbu.no
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 - Hanne Pernille Gulbrandsen
 - E-post: personvernombud@nmbu.no
 - Mobil: +47 402 81 558

Hvis du har spørsmål knyttet til vurderingen av prosjektet som er gjort av Sikts personverntjenester ta kontakt på:

- Epost: personverntjenester@sikt.no, eller telefon: 53 21 15 00.

Med vennlig hilsen

Tor A. Benjaminsen
(Forsker/veileder)

Erika Amlie Amundsen
(Student)

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet «Det grønne skiftet i Norge. En narrativ analyse av karbonfangst- og lagring», og har fått anledning til å stille spørsmål. Jeg samtykker til:

- å delta i intervju
- at intervjuet tas opp på lydopptak
- at mine uttalelser knyttes opp mot politisk parti/organisasjon/firma
- at opplysninger om meg publiseres slik at jeg kan gjenkjennes

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet

(Signert av prosjektdeltaker, dato)



Norges miljø- og biovitenskapelige universitet
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