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Navigating New Green Pathways: Aligning Alternative Growth Paradigms with EU Guiding Principles and Values

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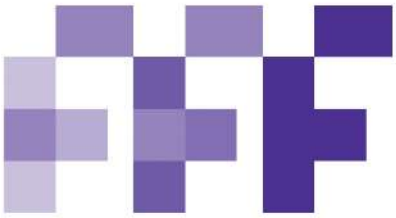

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1 Executive Summary

This Green Paper compares the guiding principles of the EU and real-life policy cases from five different countries with four alternative economic paradigms. The aim is to explore existing gaps and opportunities for further policy-making within the area of sustainability and growth. A cross-cutting analysis between all cases is done to identify important topics for further discussion and results in six main insights are identified for further policy-making:

(1) The government is important for setting the goals in sustainability policies
The government and state are important stakeholders in setting the political agenda and goals with regards to sustainability and environmental politics. Even when the market is seen as the main mechanism for achieving sustainability and distribution of energy, the government is crucial for ensuring regulations, implementations and economic support.

(2) There is a risk of conflicts between different levels of government
There is a potential risk for conflict between different levels of government when formulating and implementing environmental politics. Conflicting interest, political agendas, and strategic choices can create tensions that hinder the transition to a more sustainable society. The same applies to the relationshop between the EU and its member states, where diverging priorities between the Union and individual countries may further complicate the process.

(3) Navigating the tension between national self-sufficiency and international solidarity
A key conflict between the guiding principles of the EU, the country cases studies and the alternative economic paradigms is the tension between self-sufficiency and solidarity. This is particularly evident in the discussion and transition regarding renewable energy, where the countries producing such energy put national self-sufficiency and geopolitical interest first making energy solidarity a secondary concern. Against a backdrop of various climate changes and Russia's war against Ukraine, the European Union has underscored the importance of building a solidaric system for energy distribution within the EU and Europe. There is, however, a gap between the call for solidarity and the prioritizing of national interests, which can be an obstacle for finding a common path towards a new greener future. Building solidarity and moving away from market-driven growth are essential to ensure a fair green transition. A joint agreement on a common pathway for a greener future would be desirable to achieve this goal. To these ends the EUs influence in the region may be a powerful opportunity to include alternative economic paradigms.

(4) A critical approach to technology's role in the green transition is needed
A dominating approach to sustainability today is putting technology and the development of new green technologies at the heart of the green transition. The guiding principles of the EU clearly echoe techno-optimism arguing that technology and technological innovation are important factors to succeed in making a greener future for Europe. The question still remains how we can ensure that technological development does not come at the expense of nature and the environment. A paradox arises when untouched nature gets exploited and built over to extract raw materials for the building of climate friendly technology or, when healthy forests and land areas are put aside for the development of green, sustainable industries. The politics of the future should address such paradoxes in order to formulate policies that do not put nature and ecologies up against the work towards becoming sustainable where green technological developments are seen as worth building down nature for.

Given the centrality and acceptability of technological development to today's green transition, alternative economic paradigms offer an opportunity to redirect these efforts to ensure that they results in socially productive outcomes and avoids negative feedback on the environment and society. First, technological development should be directed towards the achieving social and environmental targets or emissions rather than to perpetuate growth. Second, the promises of technological development and digitisation should not be used as a means to justify exponential economic growth.

(5) There is a need for change in norms and values to enforce alternative(s) (to) growth
Much of the political, economic and societal discussions and decision-making today are today based on neoliberal thinking, where economic wealth and growth are important elements of how policies are formulated. If the future should represent new green pathways it seems evident that a changes in norms and values is necessary in order to reach such a future.

To make and implement policies based on alternative economic or alternative(s) (to) growth paradigms, a stronger enforcement of such paradigms are needed. The majority of alternative thinking today is found in political documents that have a weaker degree of enforcement and, therefore, alternative(s) (to) growth have little power behind their words. To ensure a policy-making that considers alternative economic paradigms seriously one should strive for enforcing political agendas and decisions where the goal is to make changes in norms and values.

While the case studies generally indicate that Europe is far from changing its norms and values regarding growth, the Netherlands case highlights the potential for progress if we can shift away from established top-down policy frameworks and industrial interests.

(6) The relationship between sustainability and growth remains unclair
A fundamental tension lies in the relationship between sustainability and growth. On the one hand, sustainability is argued to be a new growth strategy while on the other hand, it is pointed out that growth can never be a core idea in making our living sustainable. How should one unite the wish for growth while still being within planetary boundaries? One of many examples of this tension is the society’s digital consumption which is the main driving force for the growth in and establishment of data centres. A prerequisite for this industry’s future growth are our society’s ever growing appetite for data-driven services, where green digitization and data storage is seens as a major part of the green transition. This example illustrates that sustainability is used as an justification to make societies and nations grow - economically, industrially and technically - by capitalizing on human consumption and building over nature to facilitate and expand this perceived “green” industry needed for a sustainable future. There seems to be a conceptual gap between sustainability and growth, but this is also a room for adjustments and reconfigurations.

2 Introduction: Vision and problem of this Green Paper

The European Union has prioritized the development of a comprehensive and integrated climate policy framework in recent decades, to make Europe the first climate-neutral continent by 2050 and reduce net greenhouse gas emissions by at least 55% by 2030. Acknowledging the achievements of the EU's green transition policies, MultiFutures aims to explore additional policy options and strengthen existing measures to accelerate the pace of progress towards climate neutrality and to ensure that Europe becomes a climate-neutral, environmentally sustainable, resilient continent, while simultaneously decoupling economic growth from resource consumption by 2050.

There are different normative views on how a sustainable and prosperous society should look like. Slingerland et al. (2024) analysed the beyond growth debate and found that the debate can be naild down to four key paradigms or positions. These paradigms have different views on the relationships between economic growth and sustainability. These four paradgims is in this Green Paper compared to real-life case studies of sustainability policy making in five different contries. Using the framework of alterantive(s) (to) growth paradgims that was developed in Slingerland et al. (2024), this paper identifies underlying assumtioms on growth and sustainability in five case studies of present day policy making in different contries. Assessing also the roads not taken, it provides insights and advice to policy-makers for designing policies that are resilient to different visions of a new sustainable pathway for our societies. For this, we will conduct in-depth comparisons between alternative growth paradigms identified in Slingerland et al. (2024) and the current EU guiding norms and values, and assess the compatibility of alternative growth paradigms and EU principles.

3 This Green Paper

This green paper identifies opportunities for adjustments, innovations, and strategies that can bridge the gaps between alternative economic growth paradigms and key European Union's (EU) princples (European Commission, 2019; Joint Research Centre, 2022; Draghi, 2024), as well as highlighting where such gaps cannot be closed. For this, a comprehensive analysis of policy documents from case countries from both within and outside the EU is conducted, and the results are compared to the alternative growth paradigms identified in Slingerland et al. (2024) and the EU's guiding principles. The reason for including non-EU countries is to diversify political, economic and societal contexts in order to better understand how alternative economic paradigms are aligned or not with today's policy-making. Finland and Netherlands are included as representations of EU countries, Norway and Türkiye are included to represent non-EU countries which are intertwined with the Union and its policy, and the U.S. was chosen on the background of its powerful status in setting the political agenda on the global stage.

3.1 Methodology

The basis for analysis in this Green Paper is a critical discourse analysis (CDA) of six different cases: A case from five different countries (Norway, Finland, Türkiye, Netherlands and the U.S.) and the EU's guiding principles based on three central strategies (European Commission, 2019; Joint Research Centre, 2022; Draghi, 2024), The case analysis was conducted through a five step process illustrated in the following table:

	What	How
Step 1	Selection of countries	The first step was to choose the countries that should serve as the basis for the analysis, based on the criterias of geographical spread, socioeconomic differences, and EU membership or not.
Step 2	Selection of case	In the second step, a selection of cases from each country was done based on actuality and ability to explore how growth and sustainability are being negotiated.
Step 3	Finding relevant documents and code them in a template	The third step was done by searching for and finding relevant documents connected to each case. A joint template was developed by the authors for coding of documents based on defining futures.
Step 4	Selection of a few document for CDA	In the fourth step, a selection of documents for close reading and critical discourse analysis was chosen for each case, based on the documents relevance and ability to demonstrate important aspects of the case.
Step 5	CDA and writing analysis	The final and fifth step consisted of a critical discourse analysis of the chosen documents in all cases before a writing analysis based on a selection of relevance and ability to demonstrate the case and its tensions.

Table 1 Methodology steps

After selecting relevant countries, cases, and documents, a close reading of a few main documents was done by using CDA to develop an analysis from each case. CDA examines how various forms of power, dominance and inequality – whether social, economic or political – are enacted, reinforced and sometimes resisted through various forms of communication within social

and political contexts (van Dijk, 2015). To build the fundament for this Green paper, special attention was given to seven key aspecting of and in the documents: 1) Key words and concepts, 2) Actors, power and responsibilities, 3) Implied power and world view, 4) Methapors and symvboles, 5) Intertextuality, 6) Power and ideology, and 7) Connection of micro-macro levels.

The results from the CDA is presented in Section 4 in this Paper, and is further used as a point of departure for the cross-cutting analysis in Section 5. The identification of the themes in the cross-cutting analysis was done based on both empirical (inductive) and deductive coding. In practice this involves developing codes that are combinations of both the empirical material from each case study while at the same time being derived from both objectives in the MultiFuture project and Slingerland et al. (2024).

Step 6	Cross-cutting analysis	A cross-cutting analysis was done in order to identify important themes across the cases. A set of codes was developed from the task description of T1.2 and from the four paradigms identified from D1.1 (Slingerland et al. 2024)

Table 2 Methodology for cross-cutting analysis

The results from the cross-cutting analysis is used as a background in the formulation of the main insights for further policy-making explored in Section 6 of this paper.

Empirical case studies and normative paradigms
The case studies in this Green Paper is first and forstmost empirical driven, meaning that the point of depature for the analysis is the policy documents selected for each case in the CDA. It is this empirical data which is the fundament and a main focus of the cross-cutting analysis. However, the more normative alterantive economic paradgimes identified and described in Slingerland et al. (2024) are important reference points for comparisation which leads to the identification of alignments and gaps between the case studies and paradigms.

A note on the different structure of the case studies
The case studies presentet in the analysis of this paper are structured in different ways as a result of them being different cases highlighting different themes and written by different authors. Documents was choosen and analysed using a the common template developed by the authors, but some individual adjustments was done in order to capture particular aspect of each case. The difference in structure of the analysis and presentation of the case studies points at the same time against the importance of making future sustinable pathway's that have local and regional adaptions.

3.2 The need for this information

The future presents itself with problems and possibilities when it comes to climate and environmental change. There is broad political and societal agreement that our society's should transition onto greener and more sustainable pathways. However, there is still no consensus on how this green transition should look like and take place. Different stakeholders and political positions argue for versions of the green transition, where different arguments are being made about which fundamental shifts are needed to put societies onto new future pathways. The aim of this Green Paper is to show how the work on becoming more *sustainable* presents itself with a number of dilemmas and tensions which need to be addressed in order to actually achieve

sustainable ways of living. *One of the fundamental question in this paper is about the relationship between growth and sustainability, and what it should look like in the green transition*. This Green Paper identifies opportunities for adjustments in future policy-making related to sustainability, growth and the green transition. In addition it identifies gaps where there seems to be no way of reconciling today's way of thinking with alternative economic paradigms.

4 Analysis

The following section starts with a presentation of the four alternative paradigms identified in MultiFutures by Slingerland et al. (2024) before presenting the main results from the critical discourse analysis of the EU's guiding principles and country cases. In both the Norwegian, Turkish, Dutch and Finnish case, the policy documents are read in the orginial language they are written in and translated for the analysis. The cases will be analyzed against the four main alternative paradigms researched Slingerland et al. (2024). This analysis are the basis for the cross-cutting analysis and the insights for further policy-making which follows after this section.

4.1 Alternative economic paradigms

In the MultiFutures project, Slingerland et al. (2024) mapped and analysed alterantive growth paradgims with the main goal to develop a taxonomy of alterantive growth paradgims for further use in the project.

Based on quantitative and qualitative mapping of alternative growth paradigms in both scientific, public and policy literature, they indetify four main paradgims: Green Growth, Mission Economy, Post-Growth, and Great Mindshift. The paradigms are classified across an axis based on their views of change of norms and values, and a top-down / bottom-up dimension as in the government being the main and primary driving force for change versus other actors such as businesses and civil society or citizens.

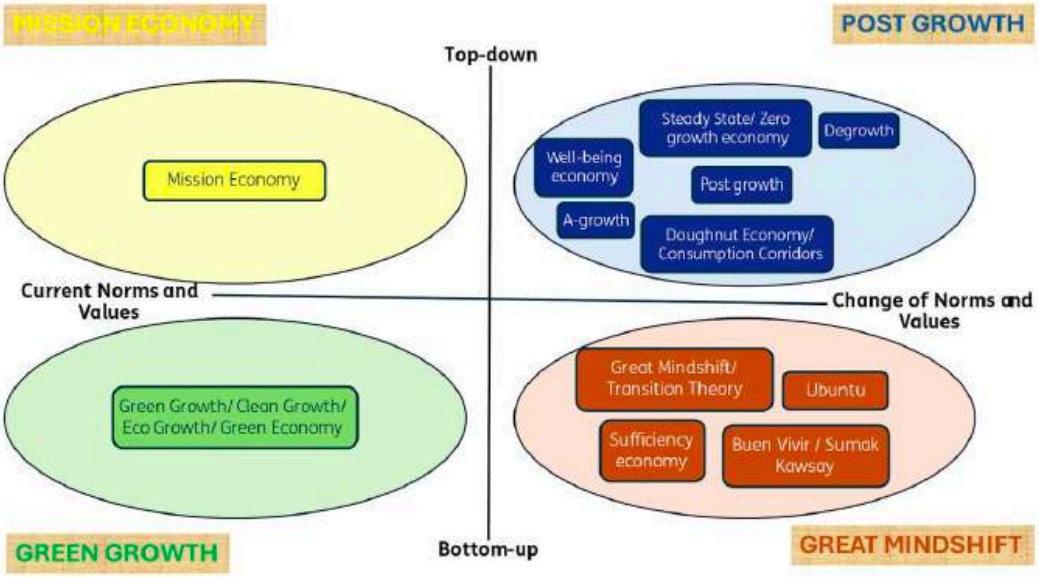

Figure 1 Proposed alternative economic paradigms identified in Slingerland et al. (2024)

In the **Green Growth** paradigm, the government views the market as the primary driver of transition towards sustainable futures. The key mechanism for regulating market actions is the internalization of environmental externalities in market prices, ensuring that economic incentives align with environmental goals. The most likely sustainability targets within this framework are the current climate change goals, which aim to limit global temperature rise to a maximum of 1.5° celsius. However, more ambitious objectives, such as meeting the Rockström planetary boundaries (Steffen, 2015), could also be envisioned within this approach.

Sustainability goals in this paradigm are framed in market-oriented terms, such as “decarbonizing” rather than “de-fossilizing”. Market-based instruments are considered the primary tools for achieving these goals, particularly trading systems e.g. the existing EU Emission Trading Scheme (ETS) for greenhouse gas emission (GHG).

In Green Growth, GDP growth is regarded as essential for funding sustainability initiatives and other societal objectives while simultaneously being a key measure of governmental policy success. It envisions a future society that largely maintains existing behaviors, norms and values. Individual freedom is a key aspect with minimal government intervention in personal choices. While some degree of wealth distribution within countries may be pursued, it is generally considered secondary and, at times, even counterproductive to fostering efficient innovation. Global wealth redistribution, however, is given little to no attention within this paradigm.

In the **Mission Economy**, the government establishes ambitious societal “moonshot” missions to address urgent challenges. One such mission could e.g. be “solving climate change”, though it might also be framed as “staying within planetary boundaries”. Once a mission’s goal is defined, the government develops detailed plans for its implementation, including strategic decisions on which technological innovations to support. This approach involves industrial policy with a predetermined selection of specific technologies to be promoted. To achieve its objectives, the government employs a combination of direct regulation and market-based instruments while closely monitoring and enforcing progress. GDP growth is considered a necessary condition for accomplishing mission goals. The envisioned future society remains largely rooted in current behaviors, norms and values, with minimal restrictions on individual freedoms. Substantial wealth redistribution, whether within or between countries, is not expected to be a priority in a Mission Economy.

In the **Post-Growth** paradigm, the government plays a central role in directly steering environmental and social policies to achieve societal well-being. To support this, a well-being dashboard with key indicators and corresponding budgets is developed. Environmental objectives prioritize staying within all planetary boundaries, rather than focusing solely on climate change targets. A fundamental aspect of the social goals in Post-Growth is establishing what constitutes a just redistribution of wealth, both within and between countries.

Economic growth, whether positive or negative, is considered a secondary outcome, subordinate to achieving environmental and social objectives. As a result, structural changes that could lead to significant economic decline in certain sectors are seen as justified. This includes “de-fossilization”, leading to rapid phase-out of the fossil fuel industry, as well as the elimination of other highly polluting industries. Shifting social norms, values, and behaviors through government-led initiatives is viewed as a crucial prerequisite for effective sustainability policies. A progressive consumption tax, which adjusts tax rates based on the environmental impact of goods and services, is a key policy tool in Post-Growth. This may be paired with reduced labor taxes as a compensatory measure. Other major societal transformations include the implementation of universal basic income, a significantly reduced working week, and the formal recognition of voluntary care work within the economic system.

While technological innovation remains important, it is expected to be developed and shared on an open-access basis. The democratic system would need to be reformed to include more public participation in decision-making, such as through local and national citizen councils that co-decide on major policy issues alongside policymakers. The financial system would also

likely be restructured to reduce profits in the monetary economy, particularly in sectors not directly tied to material assets.

In the **Great Mindshift** paradigm, national governments undergo reforms to decentralize power, granting greater executive authority to local entities such as municipalities. The economic focus shifts towards local self-sufficiency and autonomy, with the concept of Transition Towns serving as a key guiding principle. Local authorities take the lead in pursuing ambitious environmental and social goals, with GDP figures considered a secondary outcome rather than a primary objective. Policies are likely to be shaped around planetary boundaries, including zero fossil fuel use, reduced resource extraction, and strict resource caps. While shifting societal norms and values is a major focus, the emphasis is placed on nudging rather than strict enforcement.

Change is largely driven by local niche entrepreneurs and enlightened citizens as bottom-up frontrunners that lead the way towards changes in norms and values. A defining characteristic of Great Mindshift is bottom-up citizen participation in policymaking, ensuring that decision-making processes are inclusive and community-driven. There is also a strong emphasis on recognizing and valuing knowledge and rights, along with legal rights for nature. Additionally, redistribution of wealth is a central goal, both at the local level and on a global scale, fostering greater equity between poorer and wealthier communities.

The Green Growth, Mission Economy, Post-Growth, and Great Mindshift paradigms differ primarily in the role of government, economic priorities, and societal transformation. **Green Growth** relies on market-driven sustainability, using economic incentives and broad technological innovation to align with environmental goals while maintaining GDP growth as a key indicator. **Mission Economy**, in contrast, takes a government-led approach, setting clear societal missions and actively steering technological choices and industrial policy to achieve sustainability targets. **Post-Growth** deprioritizes economic growth altogether, focusing instead on well-being, environmental limits, and wealth redistribution, even if it leads to economic contraction in certain industries. Meanwhile, **Great Mindshift** envisions a decentralized and community-driven future, where local authorities and grassroots movements take the lead in shaping sustainable societies, prioritizing self-sufficiency, rights for nature, and global equity. While all four approaches aim for sustainability, they differ in how they balance market forces, state intervention, and social change.

	Green Growth	Mission Economy	Post-Growth	Great Minshift
Guiding principles (goals)	Internalisation of externalities in market prices with the aim to achieve decoupling for climate goals or all planetary boundaries	Direct technology choices and governmental action to achieve climate goals or planetary boundaries	Strong norms, values and behavioural policies to achieve planetary boundaries combined with national and international (North/South) redistribution policies	Strong norms, values and behavioural shifts to achieve planetary boundaries, with a focus on stimulating own initiative. Focus on bottom-up technological innovation, decentralisation, self-sufficiency, local governance and economies

Key scaling actor	Market parties determine the direction of innovation after Government has set market borders to internalise externalities	Government chooses technologies to achieve planetary boundaries and develops detailed implementation plans (direct regulation)	Government sets direct regulation for norms, values and behavioural shift, determines macro-economic reform policies (reduced working hours, North-South redistribution)	Enlightened entrepreneurs and citizens determine bottom-up innovation directions, decentralised policy making within countries
Position towards GDP	GDP growth is required to finance environmental measures	GDP growth is required to finance technological innovation for societal missions	GDP growth or degrowth is the result of achieving planetary boundaries and social goals	GDP growth or degrowth is the result of achieving planetary boundaries and self-sufficiency goals
Norms, values and behavioral change	Current norms and values are not influenced by policy making. Limited/ no behavioural change policies	Current norms and values are hardly influenced by policy making. Limited behavioural change policies	Changing current norms, values and behaviours towards more ecocentric views with strong governmental policies is considered a prerequisite for achieving planetary and social targets	Changing current norms, values and behaviours towards more ecocentric views and a focus on self-sufficiency is considered a prerequisite for achieving planetary and social targets
Technological innovation	Technological innovation is strongly stimulated with general, technology-neutral financial instruments	Technological innovation is strongly stimulated by direct governmental technology choices and instruments	Technological innovation is stimulated with a clear preference for local, small scale technologies and public/citizen ownership	Technological innovation is stimulated with a clear preference for local, small scale technologies and public/citizen ownership
Redistribution of wealth	No North/South wealth redistribution. Within countries there is limited wealth redistribution	No North/South wealth redistribution. Within countries there is limited wealth redistribution	Strong North/South redistribution policies and redistribution policies within countries	Local governments redistribute wealth within their own areas
Characterising policies	Market creation for planetary boundaries, ETS	National governmental missions, direct	Strong norms, values and behavioural change policies	Strong norms, values and behavioural change policies based

Table 3: Key features of the alternative paradigms in MultiFutures (Slingerland et al. 2024)

4.2 Guiding principles of the European Union

In the **EU strategic agenda for 2024-2029** (European Council, 2024) leaders of the EU set out three central priority areas that are meant to guide the work of the EU institutions over the next five years. The EU argues that the need for a strategic agenda stems among others from the "fight against climate change to the COVID-19 pandemic and supporting Ukraine following Russia's war of aggression". By focusing on the three areas of priority, the EU seeks to help make Europe more sovereign and better equipped to deal with future challenges.

Priority 1: A free and democratic Europe • upholding the European values within the EU • living up to EU values[1] at the global level
Priority 2: A strong and secure Europe • ensuring coherent and influential external action • strengthening EU security and defence, and protecting EU citizens • preparing for a bigger and stronger Union • pursuing a comprehensive approach to migration and border management
Priority 3: A prosperous and competitive Europe • bolstering the EU's competitiveness • making a success of the green and digital transitions • promoting an innovation- and business-friendly environment • advancing together

Table 4 The 3 priorities of the EU strategic agenda for 2024-2029

There are many and different documents that lay the groundwork for the guiding principles of the EU. One of the goals of MultiFutures is to find new pathways towards sustainable, climate-neutral futures by exploring alternative economic paradigms and broadening policy options. In order to explore which principles are guiding the sustainability work - both economic and environmental - of the EU institutions and countries today, the following section will take a closer look at EU strategies which addresses the work on getting more sustainable, and how this is interlinked with economic growth. In addition the EU's Twin Transition Strategy (Joint Research Centre, 2022) will be included to understand how digitalization is perceived to help out in the green transition while at the same time stimulating economic growth. The Twin Transition Strategy is especially interesting in regard to the Norwegian case analysis in this Green Paper looking at the data centre industry in Norway. Even though Norway is not an EU country, the Twin Transition Strategy together with the European Green Deal is used by the Norwegian government (Ministery of Trade, Industry and Fisheries, 2018; Minstery of Local Government and Modernisation, 2021) to argue for the need and establishment of data centres in the first place. All strategies also support the priorities on the strategic agenda, especially priority 2 and 3 (see table above).

The European Green Deal (European Commission, 2019)
In late 2019, the European Green Deal was presented as the Commission's commitment to tackling climate and environmental-related challenges (European Commission, 2019). The Deal

[1] The EU are founded on six core values: Respect for human dignity, freedom, democracy, equality, rule of law, respect for human rights including those of minorities. https://european-union.europa.eu/principles-countries-history/principles-and-values/aims-and-values_en

was created against a background of different effects and outcomes of climate change impacts that affect individuals, societies, countries and the whole world. A European Green Deal was therefore set out as a suggestion of how to turn an urgent challenge into a "unique opportunity" (European Commission, 2019:1). *The Green Deal is therefore often framed as the EU's strategy for sustainability and the green transition, but at the same time it needs to be regarded equally as a growth strategy designed to make the EU economy more competitive, resilient, and innovative*. In its introduction, the European Green Deal is argued to be:

> (...) a new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use (Euroepan commission, 2019:2).

This deal should therefore be regarded as the EU's new growth strategy that both tries to ensure economic growth while at the same time protecting, conserving and enhancing natural capital, and protecting the health and well-being of its citizens. With this strategy the Commission seeks to transform the EU economy into one that is resource-efficient, competitive, and carbon-neutral by 2050 while ensuring that economic progress does not come at the expense of environmental degradation. Through the Green Deal, the EU wants to utilize its collective ability to *transform* its economy and society onto a more sustainable path.

An important question which stems from the idea behind the European Green Deal is how the Commission sets out to unite economic growth with the green transition and sustainable development. One of the fundamental goals of the Green Deal is to decouple economic growth from resource consumption, ensuring that economic expansion does not lead to increased environmental degradation (p1.). The EU wants to change the more traditional linear economic model with a circular economy, innovation and regulatory shifts. Rather than seeing environmental policies as a cost to economic growth, the Green Deal positions sustainability as a driver of new industries, jobs, and long-term economic sustainability.

In the ***European Green Deal Investment Plan*** (European Commission, 2020), also called the Sustainable Europe Investment Plan, the Commission makes their arguments about how the European Green Deal will ensure a green transition which also will contribute to economic growth. The transformation to a greener future is not seen as an economic burden but as a new growth strategy, where the green transition first and foremost represents a possibility for massive investments which will have trickle-down effects in societies. For example, in order to reach the 2030 climate and energy additional investments of EUR 260 billion a year by 2030 are needed (European Commission, 2020:2). One of the trickle-down effects is the materialization of many new "green jobs". Investments in renewable energy, energy efficiency, digitalization and "green infrastructure" will stimulate innovation and create new job markets. The European Social Fund will for instance support the upskilling and reskilling of 5 million workers for green jobs (European Commission, 2020:8)

Update on the work with the European Green Deal from the von der Leyen Commission as of 2024

On the Commission's website there is an update on the progress of the von der Leyen Commission's work with the European Green Deal so far (European Commission, 2024). The headline of the update reads as following: "A growth strategy that protects the climate". In what follows, the Commission underscores its commitment to transform the EU into a clean, resource-

efficient, and competitive economy, in line with the goals of the Paris Agreement, where the aim is to make Europe the first climate-neutral continent in the world. Recent social, economic and geopolitical developments, the Commission continues, have reinforced the urgency of such a transition. *The shift towards clean energy and technologies is now more than ever a driver for economic growth and innovation*. Additionally, Russia's aggression against Ukraine has underscored the importance of reducing reliance on unreliable partners and strengthening Europe's energy autonomy towards renewable, energy efficient, and other Green Deal initiatives.

Although the Commission acknowledges the need for setting targets, without specifying what these trages are, they see the European Green Deal as something *more*: "It is also about creating the right enabling environment". What this means in practice is not explained *per se*, but "putting people at the core of the transition" seems to be its priority, meaning that the Commission sees itself as ensuring that the "clean transition" is just and fair supporting those who are more vulnerable and most affected by climate change. In addition to ensuring that the "clean transition" is just and fair, a cleaner energy system is fundamental for achieving climate neutrality in the EU. The Commission underscores that the EU needs to build out a more efficient energy system which is not dependent on fossil fuels. In their work on doing so they want to ensure that the capital flows go in the right direction, and that people and businesses have access to the financing they need to carry out "green investments".

A third important aspect of the Commissions work with the European Green Deal, they argue, is that they have ensured that "(...) our economy and our industries are fit for the clean era and that they reap the benefits of the transition" while at the same time being able to compete with "our economic competitors". In this also lies the Commission's wish for laying the groundwork to "(...) build a more circular and resource-efficient economy". In their future work with the European Green Deal, the Commission has made it their priority to have "true dialog with stakeholders" to tackle the challenges of the clean transition collaboratively. That is why they have initiated a series of "clean transition dialogue" with key industrial sectors as well as the Future of the EU Agriculture.

Towards a green and digital future (Joint Research Centre, 2022)

"The green and digital transitions are two main trends that will shape the future of the European Union" (Joint Research Centre, 2022:7). One of the fundamental ideas in the EU is that the green transition goes hand in hand with a digital transition. This is what is known as the "Twin Transition", and in the document "Towards a green and digital future" (2022) the von der Leyen Commission presents its strategy on why and how a digitalization of societies and countries is a precondition for meeting the sustainability problems of our time. The Twin Transition strategy opens with the claim that the EU aims is to be "sustainable, fair, and competitive", and that these goals can be successfully managed with the green and digital "twin transition". But the Twin Transition does not just represent a path to keep the planet livable, but is also a possibility for the EU to seize economic opportunities to achieve an "environmentally" and "sustainable" economy. *The core argument of the "Twin Transition" way of thinking is that digital technologies provide functions that can catalyse the green transition, and that green and digital technologies mutually reinforce each other.*

The future of European competitiveness (Draghi, 2024)

In September 2024 the Draghi report on EU competitiveness was released (Draghi, 2024). Mario Draghi - former European Central Bank President - was given the task by the European Commission to make a report on his personal vision of the future of European

Competitiveness. The report addresses concerns about the EU's slowing growth since the start of the 21st century, especially in comparison to China and the US among other things. This is shown in the wide gap in GDP between the EU and the US, which the Draghi report argues is a direct consequence of the slowdown in productivity growth in Europe (Draghi, 2024:5).

The Draghi report points to several reasons why the EU is falling behind. Firstly, the previous global paradigm is fading and the previous era of rapid world trade is seen as passed, making EU companies face both greater competition globally and lower access to overseas markets. A second factor for the EU's slowing growth is the new geopolitical situation where Europe has abruptly lost its energy supply from Russia. This dependency has now turned out to be a vulnerability which is weakening the EU's competitiveness. The EU missing out on the digital revolution is a third factor for slowing growth. The Draghi report underscores that the digital revolution has led to productivity gains which the EU has not taken advantage of: "(...) in fact, the productivity gap between the EU and the US is largely explained by the tech sector" (Draghi, 2024:5). In other words, today the EU is weak in emerging technologies which will drive future growth.

All these factors combined, Draghi writes the following conclusion: "Europe's need for growth is rising" (Draghi, 2024:.5). By 2040, the working force is estimated to shrink by 2 million workers, which means the EU has to lean more on productivity to drive growth. Increased productivity is therefore a key to reignite growth in Europe. If this necessity is not meet, the EU:

> (...) will be forced to choose. We will not be able to become, at once, a leader in new technologies, a beacon of climate responsibility and an independent player on the world stage. We will not be able to finance our social model. We will have to scale back some, if not all, of our ambitions. This is an existential threat (Draghi, 2024:5)

To meet all of these changes and challenges *the Draghi report is clear that "to grow and become more productive" is the only way to preserve the EU's values of equity and social inclusion*. The Draghi report is therefore an attempt to identify areas for action to "reignite sustainable growth".

The described EU strategies can be conceived as being fundamental to Union's guiding principles. The guiding principles are political, economical and societal political agendas that the Commission have set out to follow, and therefore it says something about how the EU institutions work with sustainability, digitalization and competitiveness. In this Green Paper, these pricnples serve as a foundation for comparing alterantive economic paradigms and policies alongside contry case studies. A key objective is to assess wheter the EU's guiding princples align with altarnetive economic models or primarly adhere to the dominant paradgims, such as neoliberalism.

In the following, several case country analysis will be explored. The cases represent different areas of policy or industrial development which are relevant for the green / energy transition. The aim is to illustrate different ways of approaching and framing sustainability issues, and what solutions are suggested for meeting the needs of the green transition.

4.3 Case 1: Norway and the data centre industry

The following table shows the documents identified in the Norwegian case and the ones in bold are the two documents chosen for the CDA.

Name of document	What type of document	Stakeholder	Main goals / Keywords
Bygger Norges største datasenter på Heggvin / Norways largest data centre built at Heggvin	News letter	Løten municipality	TikTok, largest data centre in Norway
Heggvin	News letter	Hamar municipality	TikTok, largest data centre in Norway, creation of jobs
Etablering av datasentre / The establishment of data centres	Guiding document	Ministry of local government and regional development	Establishment of data centres in municipalities
Norge som datasenternasjon / Norway as a data center nation	**National strategy**	**Ministry of Trade, Industry and Fisheries**	**Data as an economic resource, data driven value creation, jobs, infrastructure**
Norske datasenter - berekraftig, digitale kraftsenter / Norwegian data centres - sustainable, digital powercentres	**National strategy**	**Ministry of Local Government and Regional Development**	**Data as an economic resource, digital economy, value creation, sustainability, twin transition**
Datasenter i Norge / Data centres in Norway	Analysis of potensial effects	Implement Consulting Group	Effects of data centres on society
Detaljregulering Heggvin næringspark / Detailed regulation Heggvin Industry Park	Hamar municipality	Regulation	Regulation of land/area to use in power intensive industry
Områderegulering Heggvin næringspark / Area regulation of Heggvin Industry Park	Løten municipality	Regulation	Regulation of land/area to use in power intensive industry

Table 5 Overview of the documents indentified in the Norwegian case study

This CDA is an attempt to understand and show what kind of wording, rhetoric and argumentation is used in the Norwegian government's strategy to frame Norway as a "data centre nation", including why it is necessary to become such a nation in the first place. The following analysis is based on a close reading of the two data centre strategies released by the Norwegian government in 2018 ("Norway as a data centre nation") and 2021 ("Norwegian data centre – sustainable, digital power centres"). The strategies lay the groundwork for further development and building of data centres in Norway, and are directed towards Norwegian industries and businesses, local government and societies, and global multinational companies such as TikTok, Meta, Microsoft and Google.

Both strategies make the overall claim that data centres represent a new and growing resource which can be exploited to create more jobs and economic growth, and at the same time being an important part of a transition towards a more "green" and "sustainable" future. The main difference between the strategies is that "sustainability" was not a major theme in the 2018 strategy whereas in 2021 it was made an important factor in the further expansion of data centres in Norway. The following analysis is an attempt to discuss what what sustainable data centres are and what role they play in the green transition.

A strategy for what?

The need for strategies for the development of data centres stems from the fact that our societies are increasingly digitized where we use more and more digital services and solutions, in addition to an increasing social media use. These trends create the needs for storage of all our data, from health information, e-mails, pictures and TikTok videos. As societies become even more digitized the need for data storage will increase exponentially, and the data driven economy therefore represents a major economic possibility which can be utilized to create more jobs and economic growth. At the same time, we are facing many challenges regarding climate and environment gloablly. *The strategies frame data centres as a key in solving climate challenges* and an important factor in Europe's green transition towards a new sustainable future. Data centres are therefore a representation of both a resource which can be exploited for economic growth and the creation of jobs and at the same time be an important part of the transition towards a greener Europe. Together these two arguments form the foundation of the Norwegian government's argumentation and legitimation of why Norway must become an attractive data centres nation where global multinational companies invest.

The strategies are clear on why Nordic countries, and especially Norway, should be the first choice when both national and global companies choose their location for data storage. The strategies pointed out that Norway is preferable because it is rich in natural resources, has a stable and cold geological climate, has a (digital) competent working stock, has functioning capital markets and is politically stable. In addition, the government wants to make Norway even more attractive by making changes in the tax system such as making an even more growth friendly tax system, removing electricity tax for data centres, and removing the property tax on production equipment and installations in this industry.

What a data centre does

As an ecnomic asset, a data centre generates jobs and drives growth, making it a key reason for why the Norwegian government seeks to establish Norway as a leading data centre hub. Based on research and impact analysis, the strategies aruge for the data centres' ability to increase growth in both number of jobs and investments in addition to having trickle down effects in the local society it's placed in. In addition, data centres in Norway are considered to have the ability to make digitalization and data storage sustianbale as Norwegian data centres rund on "green, clean, renewable" power. As of 2024, Norway's electricity generation remains predominantly renewable. Hydropower continues to be the primary source, contributing approximately 90% to the total electricity production. Wind power has seen growth, now accounting for around 8% of the electricity mix. Solar power remains a minor contributor representing less then 1% of total generation. Overall, the share of renewable power energy in Norway's electricity grid is close to 100% (SSB, 2025).

Growth and sustainability
Although economic growth is an important aspect of the industry, the 2021-strategy is clear on that the data centre industry must be developed within sustainable boundaries. What sustainable development is to be regarded as, is not specified. But when reading the documents it becomes clear what is regarded as a green, sustainable data centre. *A sustainable data centre is a centre which is supplied with and runs on green, clean, and renewable energy such as hydro power*. If a data centre gets its energy and power from green and clean sources, it seems like a data centre is to be regarded as sustainable. The idea of "clean and green power" is used to legitimize building numbers of data centres in Norway, because of Norway's competitive advantage in producing such energy.

The market and the political actor
The market is seen as important for exploiting the economic possibilities to its fullest. The data centre industry is regarded as a market in itself, where both public and private sectors meet. The government sees global actors as an important part of the data center market in Norway as they enter internal markets and become a competition for Norwegian businesses so that the best knowledge at the lowest cost is ensured. The government also wants Norway to be a part of the EU's internal digital market so that Norway and Norwegian businesses can access a market with more than 500 million people (Ministery of Trade, Industry, and Fisheries, 2018:9). The centres and their industry should develop within a market where national and local government are important stakeholders with regards to regulation and funding, but it is the market that decides where and at what cost a data centre should be established.

Both documents, although to different extents, acknowledge the need for balancing growth with sustainable industrial development. The strategies see data centres as a part of the green transition, and they are in this manner a representation and reproduction of the EU's Green Deal and Twin Transition way of thinking. The 2021-strategy (p. 31) is actively refers to and uses arguments from the Green Deal to illustrate the need for "green data power" in order to solve climate challenges and for Europe to become the first climate neutral continent. While the strategies argues for digitalization as a key part of the green transition, they do not, however, say anything about how and why digitization is green other than pointing to the argument that data centres must be supplied with "clean", "green", and "renewable", preferably Norwegian, power/energy. It is taken for granted that digitalization and the green transition are intertwined with each other, and that the government has an active voice in reproducing this way of thinking.

The strategies lack a critical assessment of the negative impacts of data centres. While the 2021 strategy acknowledges that data centres generates excess heat, the government does not madate its resuse, even in cases where it would be economiccaly viable. This omission higlights a missed opportunity to further improve energy efficienct and reduce environmental impact.

In summary
The Norwegian government frames Norwegian data centres as "sustainable" and central to the green tranisition. The strategies argue that data centres are sustainable when they run on renewable energy, but provide little justification about why digitalization is a necessity of the green transition – beyond its potential to create jobs and foster economic growth. Especially when the strategies explivitly predict and wish for growth in the use of digital solution, and therefore a need for more data storage and data centres, in addition to stating that this is something Norway should help foster. By framing data centres as a cornerstone of a sustainable, green transition without arguing how digitalization contributes to wider environmental goals, the "green

data centres" narrative risks being more of a pretext for economic ambition rhater than an actual climate and environmental strategy.

4.4 Case 2: Finland and solar power plants

The following table identifies the relevant documetns used in the analysis of the case study in Finland:

Name of document	What type of document	Stakeholder	Main goals / Keywords
Carbon neutral Finland 2035 – national climate and energy strategy	Policy document, Strategy document, Government publication	Ministry of Economic Affairs and Employment of Finland	Energy, climate, low-carbon, strategy work, hydrogen
Appendix: Funded RRF investments (in Finnish)	A document that presents a full set of Next Generation EU recovery package derived Recovery and Resilience Facility (RRF) funded projects in Finland	Ministry of Economic Affairs and Employment of Finland	Energy infrastructure, Energy technology, low-carbon hydrogen, carbon capture and utilization, industrial electrification and decarbonization, clean transition
Medium-term Climate Change Policy Plan Towards a carbon-neutral society	National policy document	Ministry of the Environment	Environmental protection, plans, emissions, climate policy, carbon neutrality
A strong and committed Finland. Programme of Prime Minister Petteri Orpo's Government 20 June 2023	Government programme, Strategic policy document	Finnish Government	Economic sustainability, wellbeing services, security, government programs, government platforms, wellbeing services counties, employment, education and training
Budget 2024 & Financial Plan 2025-2026 Simo municipality (in Finnish)	Financial planning document, Statutory document, Strategic planning document	Simo Municipality	Finnish municipal budget, local government financial plan, municipal budgeting
The Participation and Evaluation Plan for the Konnunsuo Solar Power Plant Zoning Plan (2024) and Appendix 2B – Responses and Opinions to the OAS (2024).	Policy documents around a participation and assessment scheme	The City of Lappeenranta	Green transition, solar power plant, zoning, urban planning, environmental effects, biodiversity, climate targets

Table 6: Overview of documents used in the Finnish case study

This analysis centres on the case of solar power in Finland and is based on three specific policy documents. The aim of this case study is first, to understand the state-level perceived role of solar power in Finland vis-à-vis other forms of renewable energy production, and second, to explore a local case of a solar power plant (SPP) planning process in Lappeenranta. The data consists of three specific documents: The Government Programme Section 7 – Finland and clean energy (2022), The Participation and Evaluation Plan for the Konnunsuo Solar Power Plant Zoning Plan (Dnro, 2024) and Appendix 2B – Responses and Opinions to the OAS (Participation and Evalutation Plan) (2024). This will yield a deeper understanding of the state-led vision for solar power as a part of the national energy strategy, and how this correlates with local and regional level policymaking and social realities.

The Government Program

The vision for Finland in the Government Programme (GP) of Prime Minister Petteri Orpo is as follows: *"Finland will become a forerunner in clean energy and climate handprint. Finland will create growth for a clean economy in Finland and displace polluting solutions around the world through technology exports. Finland's share of clean economy investments, jobs and value-added will grow. Finland utilizes its natural resources sustainably to improve its self-sufficiency"* (Finnish Government, 2023).The logic of the text is largely based on the Green Growth (GG) paradigm, where the open market is seen as the tool for sustainable transition. Words and expressions emphasizing 'investments', 'economic growth', 'competitive advantage', 'cost effectiveness' and 'economically sustainable business' are foregrounded in the vision paragraph and appear throughout the document in various combinations, highlighting the economic motivation for the transition. The main actors described in the text are the Government, businesses, industry, citizens, households and a ubiquitous "Finland", the use of which blurs the responsibility for actions in some cases.

The grand narrative of the GP is that of industrial transformation is necessary to achieve carbon neutrality by 2035, and carbon negativity after that. In this context 'green' growth is rebranded as 'clean' growth, visible in multiple instances across the document. The worldview of the GP is highly techno-economical. Technological and industrial development is regarded as essential for the needs of the changing markets. Finland is framed as a forerunner in this changing business environment. Facilitating regulatory processes, such as permitting procedures, are seen as factors necessary for enhanced competitive advantage: "Smooth, predictable and legally accurate permitting will become Finland's competitive advantage". Technological development is subordinate to how the GP positions "Finland's competitiveness and attractiveness as an investment destination for the renewables industry" as something that requires "doubling the production of clean electricity in Finland." Later it is stated that "Finland will increase its electricity production many times over", where the responsibility for the action is placed on the ubiquitous 'Finland'.

Despite the overall open market-focused tone of the document, the text reveals moments of overlap with other paradigms as well, as the aforementioned quotes suggest. Especially prevalent is that of Mission Economy (ME). Although the GP notes that climate actions are focused on generating technological neutrality, a close reading of the document reveals inherent value choices around them. The Government's mission statement is revealed in the following sentence: "Finland will become a frontrunner in clean energy in Europe*".* The ME paradigm provides concrete pathways for achieving this otherwise vaguely highlighted target. The GP consequently places high importance on nuclear power, wind power and the emerging hydrogen economy. The sections explaining these provide the best examples of places where the GG and ME paradigms overlap.

Sections on nuclear power use in Finland include expression that clearly state its role as essential for the future of the state: "nuclear power is needed", "The Government undertakes to accept all applications for a permit in principle that meet the criteria…" and "We will encourage the development and rapid introduction of nuclear power innovations in Finland". Nuclear power is discussed first and foremost in the framework of being vital for Finland's competitive edge rather than reaching its climate targets. Regarding the hydrogen economy, the GP states that "Finland will become a key player in the hydrogen economy", which emphasizes the frontrunner ideology present in the ME paradigm. The same is echoed in the wind power discourse where Finland is positioned against the other Baltic Sea countries regarding offshore wind power

that “creates a competitive advantage for Finland vis-à-vis the Baltic Sea countries” and which is “linked to produce energy for Finnish industry and households”. The detailed plans the Government has for these three specific technologies as shown in the GP are framed as necessary for not only the clean industry in Finland but also to strengthen Finland’s role as a global forerunner.

Interestingly, there are also instances in the GP where the Green Growth overlaps with the seemingly oppositional Great Mindshift paradigm. This is prominent in the way the Government Programme continuously discusses self-sufficiency: *“Finland will improve its energy self-sufficiency sustainably by promoting clean energy transition*”, “a balanced increase in clean electricity production and the development of the energy system will improve Finland's energy self-sufficiency”, and “Hydrogen-based investments…improving security of supply and self-sufficiency”, “Promote the development of indigenous low-emission fuels”. Although these passages do not correspond to the GM paradigm in all its aspects, it is impossible to ignore an interpretation such as this. It seems that the GP is trying to create a nationally induced mix of the GG and ME paradigms, which are very much based on the mindshift ideology and the emphasis on the “local” in the larger global context. In the process the citizens will also benefit because these actions will “lower the consumer price of electricity”.

The Participation and Evaluation Plan (OAS) and statements

Interesting for the scope of this study is the fact that solar power is discussed only very briefly in the GP. This lack of emphasis and clear strategy positions solar power as secondary for industry, investments and becoming frontrunners at the time when the GP was published. The GP frames solar power explicitly as an energy flexibility measure instead of a prerequisite for the nation’s economic growth. The construction of solar power is heavily tied to the land use discourse, calling for a case analysis focused on the relationship between them. In addition, the GP is not without references to protecting biodiversity and speaking for the wellbeing of Finnish nature. Nature, however, appears as something with utilization value, as becomes clear in this passage: “The significance of clean and diverse nature as Finland's competitive advantage and source of Finnish quality of life will be strengthened. Halting biodiversity loss as part of sustainable economic policy.”

The GP strongly positions wind and nuclear power as the most important forms of clean energy production in Finland, highlighting their development and distribution as governmental moonshot missions. It is impossible to discuss this finding and the solar power case without shedding light on some geographical characteristics in Finland.

Lappeenranta is a city in Eastern Finland, located 30 km from the Russian border. The Finnish Defence Forces operate surveillance radar systems in Eastern Finland, complicating the construction of wind power plants (WPP) in the area. This raises questions about the just distribution of wealth and opportunities between different geographical areas of Finland because clean renewable energy is seen as a prerequisite for future investments. The GP recognizes this disparity and “will improve the progress of projects in Eastern Finland” and establish “a high-level cooperation group” for this purpose. However, there is no immediate solution. Also, the GP notes that the Government will “ensure that the regulatory and licensing processes for solar energy parks are consistent, flexible and predictable across the country.”

Within this context, the promotion of solar power in Eastern Finland can also be viewed as an issue of justice, which makes this regional and local analysis important. Solar

power does not disturb radar surveillance and thus provides a form of renewable energy production that is feasible in areas where WPPs are more difficult to construct, as acknowledged by the Chief Environmental Officer of the City of Lappeenranta in a news interview (YLE, 2022). It is noted that even though solar power plants (SPP) will not be a direct source of jobs or income, they will be a pathway to and prerequisite for further investments in industries and projects that require green electricity, such as green hydrogen production (ibid.). This stance is present in the statement from the regional Centre for Economic Development, Transport and the Environment, according to which preparing a zoning plan is "commendable" and helps "build the area as planned". The Konnunsuo SPP planning process must be also mirrored against this backdrop.

Currently, only 1% of the electricity produced in Finland is produced with solar power (Energiateollisuus, 2024). Technology-wise, industrial-scale production of solar power has become more profitable and cost-effective (YLE, 2024) and currently there are 233 SPP projects in Finland: 36 are already producing electricity, 12 plants are currently being built and 199 projects are in the licensing phase (Aurinkosähkövoimalat, 2025). Konnunsuo SPP in Lappeenranta belongs to the last category and is one of the largest ongoing SPP projects in Finland. The project developer is Finnish Forus Oy, who is also looking to build SPPs in other locations in Finland, and the investor is Danish Better Energy. According to the OAS, the overarching motivation for advancing the SPP planning process is the City of Lappeenranta's target of achieving carbon neutrality by 2037. This echoes both the GG and ME paradigms, speaking of 'carbon neutrality' and 'climate targets' instead of 'defossilizing', e.g. phasing out of fossil fuels.

The plant is proposed to be constructed partly in an old peat production area, which comes with multiple advantages, such as being relatively remote areas yet having good road connections. The peat production area is open land, where natural vegetation has already also been modified, which makes them more suitable than forests for the construction of SPPs (YLE, 2022), because forests need to be cut down to make way for SPPs. The following paragraph highlights the motivation for the project: "The aim of the detailed plan is to enable the new use of the former peat production area and to promote the production of renewable energy. The plan enables the location of a solar power plant in the area and supports biodiversity". This mission statement consists of three strategies: utilizing former peat production areas—phasing out of peat production is much debated in Finland and hence this is not a neutral statement in itself—increasing renewable energy production and supporting biodiversity. Although there is no direct reference to the situation with WPPs vis-à-vis SPPs, this societal context needs to be considered.

Different from the GP, the Participation and Evaluation Plan (OAS) for the Konnunsuo SPP in Lappeenranta represents a combination of Mission Economy and Post-Growth paradigms. The focus is on changing the zoning plan to construct an SPP is approached as a moonshot mission, further visible in the detailed roadmap to realize the goal in the OAS. The City Council has a direct steering role in the project and the OAS is an example of how the local government can use direct regulation to bring about change by creating a zoning plan that will support and allow for the SPP permitting process to start. In the long run the industrial scale SPPs can be seen as a means of attracting investments, too.

Some instances of the OAS could be read as incorporating the GG paradigm with wordings such as "enabling reuse" of land. This seems to yield for a utilitarian interpretation of land use, preferably in an economically beneficial way. However, the OAS brings forward ideas of protecting biodiversity and nationally valuable cultural landscape, which also calls for an interpretation that goes beyond merely achieving the techno-economic emission reduction to reach

the climate change targets, instead raising multidimensional justice issues. This stance is illuminated in the 18 statements/opinions in the appendix 2b of the OAS.

According to the Finnish Law, landowners in the area and those whose housing, work or other conditions may be significantly affected by the plan, as well as the authorities and communities whose field of activity is being discussed in the planning, have the opportunity to participate in the preparation of the plan, assess the effects of the planning and comment in writing or orally their opinion on the matter. Thus, according to the law, there is no set list of the parties that should be included, so the inclusion/exclusion criteria for the selection of the parties requested to give their opinion on the case reveals a lot about how it is framed in the larger context.

In the Konnunsuo case, four of the statements represent regional governance and authorities, six are from various departments of the City of Lappeenranta and two are generational councils of the city. There are also two registered associations, two national authorities—The Forestry Governance and national transmission system operator Fingrid—one energy company and one private opinion. Two conclusions can be drawn from looking at the list. First, the project is clearly revealed to be of local-regional importance, evident from the sheer amount of local and regional statements. Second, considering the field of expertise of the parties who have given their statements, the Konnunsuo SPP project is positioned first and foremost as a land use project with an emphasis on how to preserve nature and the landscape. This is in accord with how the GP discusses solar power.

Many of the statements are clearly authority statements that adhere to a certain form of the text. The language used is formal, and they state their opinions from the viewpoint of the authority-as-a-subject. People involved in the process are named for transparency. The affirmative appears as “has no comments”, which both explicitly foregrounds the neutral nature of their statements and more vaguely supports the mission as outlined by the City of Lappeenranta. Many of the authorities are related to the environment and environmental health, foregrounding the status of the project as a more environmental than a technological one. It is clear from the statements that the City of Lappeenranta is uniform in its decision across all departments involved in the planning process via their right to provide a statement.

The emphasis on the environment instead of economic factors or technology mirrors that of the GP, where SPP projects are discussed mostly in relation to land use issues. Interestingly solar power does not seem to warrant many technology-related concerns, since only two of the statements spoke out about the technological aspect: Fingrid, the national electricity transmission grid operator, and 3.15 Elderly Council [of the City of Lappeenranta]. Only the Elderly Council statement explicitly touches on the technological view on solar power as a means of ‘balancing the temporal fluctuations in renewable electricity production measure’ apparent in the GP. They argue in detail and use rather colorful expressions about the SPP should *not* be built. They posit solar as a failure due to its variability in power production and the need for flexibility measures with proper storage capabilities. They go as far as to accuse the authorities of trying to polish their image with seemingly green solutions that are all for vain: “neither wind nor panels will bring the much-needed saving power, perhaps money to the city, but as an energy solution it is but pointless nonsense, supposedly promoting the green transition. [Politicians] washing their face, that’s all.” The statement from the Youth Council of Lappeenranta stands in stark contrast, considering “the detailed plan proposal to be excellent in terms of both the environment and sustainable development”. These two statements reflect the generational gap in attitudes and potentially the experiential notions of intergenerational justice that bleed into

official decision-making processes. The younger generation is clearly more supportive of the ME paradigm.

In addition to the 3.15 Elderly Council statement, the greatest deviations from the common opinion come from the two registered associations (Birdlife Finland and a local hunting association). Both statements overtly mirror the values of the GM paradigm with its emphasis on the rights for nature, trying to push the local authorities for ambitious environmental targets. On the face of it, their arguments are solid and framed within the multispecies justice framework, emphasizing the importance of the old peatland for various species from highly endangered birds to elks. The specific endangered bird is protected to the degree that all information regarding it is protected in the documents. In the case of the hunting association, the environmental framework of their statement is utilitarian. They explicitly state that elks “like the area very much”, almost humanizing the animals, only to state in the next sentence that a few elks have been killed in that area in the past year. This statement reveals that the protection of biodiversity is used as a finer term for the act of reducing nature to something utilitarian that should benefit humans and their pastime activities.

Birdlife criticizes the plan for being too general and explicitly states that they consider the location of the SPP problematic and call for a transparent birdlife impact assessment. But if considered in the light of a statement from a citizen living nearby, it becomes clear that even something as ‘innocent’ as birdwatching can become a burden on the local citizens: “The volume of traffic on the road has increased considerably during spring 2024 when the construction of a bird wetland has begun in the decommissioned peat production area. Large numbers of birdwatchers drive on the road every day, especially on weekends, and traffic will only increase when the wetland with its bird towers is completed”. These three statements highlight the discourse of a conflict of interest of achieving climate targets and the citizen’s right to their wellbeing. But as the private citizen statement clarifies, there are justice issues to be considered even in the overtly well-meant wish to preserve nature and biodiversity.

The OAS reflects on the fact that 90% of national and regional decision makers would promote solar power (Energiateollisuus, 2024). However, even though solar power is the most popular form of energy production in Finland (ibid.), the NIMBY effect is in place. The statements, however, demonstrate that it is not so much the plant itself as a technological disturbance that causes resistance, but rather the effects it might have on people’s perceived sense of rights of self-realization. This resistance appears as environmental concerns reminiscent of the GM paradigm. In addition, the statements bring forward the consideration of various other justice issues from recognitional and distributive justice to intergenerational and multispecies justice.

4.5 Case 3: Türkiye and renewable energy policies

Title	Author	Year	Type of document	Abstract
Renewable Energy Resource Areas (YEKA) Regulation	Ministry of Energy and Natural Resources	2013	Regulation	Covers the procedures and principles regarding the roles and responsibilities of public legal entities and legal persons in order to regulate the granting of Renewable Energy Investment Certificates and the establishment and operation of the support Mechanism.
Model Agreement for the Establishment of Renewable Energy Cooperatives	Ministry of Trade	2024	Model Agreement	Covers the articles regarding the establishment, financing, shareholder and administrative structures for renewable energy cooperatives.
Local Component Regulation	Ministry of Energy and Natural Resources	2021	Regulation	Covers the procedures and principles regarding the incentives in order to support the use of domestic equipment and components for facilities that produce electricity using renewable resources.
Newsletter on Renewable Energy Projects of the Municipality	Izmir Metropolitan Municipality	2024	Newsletter	Provides a position statement of Izmir Metropolitan Municipality regarding environmental issues and an overview of the current projects and stakeholders including the European Bank for Reconstruction and Development (EBRD) and the Covenant of Mayors.
Wind Energy Investor's Guide	Turkish Wind Energy Association	2024	Guideline and Process Flows for Wind Power Plant Investments	Provide the general guidelines for wind energy investments in order to guide potential investors as well as detailed process maps, checklists, and a list of frequently asked questions, based on the current legislation.

Table 7 Documents used in the Türkish case study

Renewable Energy Policy Evolution in Türkiye

Türkiye's renewable energy sector has evolved significantly over the past several decades, influenced by technological advancements, policy changes, economic priorities, and international climate commitments. This evolution can be analyzed in four main phases: State control period (pre-2000), market liberalization period (2000–2010), industrial policy expansion period (2010–2020), and the current focus on energy sovereignty and the green transition (2020–present) (PWC, 2023; Republic of Türkiye Ministry of Energy and Natural Resources, 2025a; Republic of Türkiye Ministry of Foreign Affairs, 2025a).

Before 2000, Türkiye's energy sector was largely state-controlled, with a strong reliance on fossil fuels and hydropower. *The government was the primary actor in energy generation and distribution, and private-sector involvement was minimal*. During this period, hydropower was the dominant renewable energy source, also contributing to electricity generation and Türkiye's energy security as an indigenous resource. The other types of renewables, such as wind, solar, and geothermal, were not developed because of high costs, lack of infrastructure, and limited technological capacity. Through the Electricity Law No. 3096 (1984), which allowed Build-Operate-Transfer (BOT) models for energy projects, limited private-sector participation was possible. However, renewable energy investment remained low, since fossil fuel-based electricity generation was still more cost-effective (Electricity Law No. 3096, 1984).

In the era between 2000 and 2010, the market was being liberalized and the production of renewable energy production started. The energy market liberalization in Türkiye started in the early 2000s. The market liberalization was initiated by Türkiye's aspirations for EU membership, economic reform efforts, and energy security concerns. The government recognized the need for private-sector participation and investment in the energy market, leading to the introduction of key market-friendly policies and regulatory changes (PWC, 2023). During this period, key developments were obtained through Energy Market Law No. 4628 (2001) which introduced the Energy Market Regulatory Authority (EMRA) to oversee liberalization, Renewable Energy Law No. 5346 (2005) establishing the first legal framework for supporting wind, solar, biomass, and geothermal energy, and the introduction of feed-in tariffs that aimed to incentivize investment in renewable energy projects (Energy Market Law No. 4628, Renewable Energy Law No. 5346).

Within the 2010–2020 period, the focus of Türkiye's energy sector policies was on expansion and industrial policies. *The 2010s were marked by rapid growth in Türkiye's renewable energy sector, with the government introducing large-scale investment programs and localization policies.* This period marked a shift from the market liberalization era to industrial policy expansion, where renewable energy was seen as an environmental necessity as well as a tool for economic and industrial development. The main policies and developments of this era were Electricity Market Law No. 6446 (2013) introducing competitive bidding for energy projects, Renewable Energy Resource Areas (YEKA) Regulation (2016) which established tenders for wind and solar projects, requiring local manufacturing of components, Local Component Regulation (LCR) (2021) which mandated domestic production of renewable energy technologies, reinforcing Türkiye's economic nationalism in energy policy (Electricity Market Law No. 6446, Renewable Energy Resource Areas (YEKA) Regulation; Local Component Regulation (LCR), 2021). Following the YEKA tenders and with the support of Power Purchase Agreements, wind and solar production capacity increased significantly. By the end of this period, renewables accounted for nearly 40% of Türkiye's electricity generation, with continued policy-driven expansion in the wind and solar sectors (TEIAS, 2024).

Within the period after 2020 debates on energy sovereignty and the green transition were prominent in the Turkish energy policy. *Türkiye's renewable energy policy continues to emphasize energy sovereignty, localization, and industrial growth, whereby climate action and sustainability concerns have also gained significance*. Türkiye has also set ambitious targets for decarbonization. The key developments of this period are the Net Zero Target 2053 Strategy which introduced broad goals for carbon neutrality, updated YEKA Regulations strengthening local content requirements and expanding renewable energy tenders, the Energy Efficiency Action Plan (2023) which encouraged digital energy management, smart grids, and energy storage, and the Hydrogen Strategy Discussions (2024) that positioned Türkiye as a potential green hydrogen hub (Net Zero Target 2053 Strategy; Hydrogen Strategy (2024).

Currently, renewables account for over 40% of Türkiye's total electricity generation, led by hydropower, wind, and solar (Republic of Türkiye Ministry of Energy and Natural Resources, 2025b). Energy policies, on the other hand, continue to prioritize national security, industrial growth, and localization alongside climate action.

The key trends in Türkiye's Renewable Energy Evolution can be listed as the shift from market liberalization to state-led industrial policy, local content policies as a central theme, continued reliance on hydropower, balancing trade commitments with localization goals, and green hydrogen and energy storage as future priorities. Türkiye's renewable energy

policy has evolved from state-controlled hydropower dominance to market liberalization, followed by a shift toward state-led industrial policy emphasizing localization. While Türkiye has made significant progress in expanding wind, solar, and geothermal capacity, its policies continue to focus more on economic growth and energy sovereignty than on deep decarbonization and energy justice.

The Renewable Energy Resource Areas Regulation (YEKA)

The Renewable Energy Resource Areas (YEKA) Regulation, introduced in 2016, was designed to *accelerate Türkiye's transition to renewable energy through large-scale, competitive tenders.* The regulation establishes designated zones for renewable energy projects, in which investors compete for project rights through government auctions (Renewable Energy Resource Areas (YEKA) Regulation, 2005).

YEKA aims to achieve multiple goals: reducing reliance on fossil fuels, attracting foreign investment, encouraging domestic manufacturing, and ensuring long-term price stability in the electricity market. Winning investors enter Power Purchase Agreements (PPAs) with the government, ensuring stable revenue streams over extended periods. The YEKA regulation also establishes that part of the technology used in these projects must be produced in Türkiye, promoting domestic manufacturing in solar and wind energy sectors.

From a policy standpoint, YEKA represents a hybrid market model, in which private investment is encouraged but within a framework of state intervention and regulation. The policy provides long-term financial security to investors, but it also imposes constraints that limit flexibility. The regulation has led to the successful development of large-scale wind and solar projects, ensuring price stability and attracting major investors but the requirement for local production has increased costs, making some projects less attractive to international investors.

YEKA has also led to a concentration of power among large corporations, as only companies with sufficient financial resources can comply with its demands. The policy has been less beneficial to small energy developers, who lack the capacity to meet localization rules or establish R&D facilities in Türkiye.

Stakeholder Representation

The primary stakeholders in YEKA include government institutions, large-scale energy corporations, and international investors. The Ministry of Energy and Natural Resources (MENR) oversees the selection of renewable energy zones, while the Energy Market Regulatory Authority (EMRA) enforces tender conditions. The winners of YEKA tenders are usually major industrial firms, both domestic and international, that can meet the minimum financial and localization requirements.

Local communities, cooperatives, and small renewable energy developers, who lack the financial and technical capacity to participate in large-scale tenders are not mentioned in the YEKA regulation. Environmental organizations and NGOs play no formal role in decision-making, meaning that the policy is highly centralized and corporate-driven.

Historic and Social Context

The YEKA regulation was implemented at a time when Türkiye was shifting from a liberalized energy market to a more state-controlled industrial policy. In the early 2000s, Türkiye followed EU-aligned market liberalization strategies, opening its energy market to private-

sector competition. However, by the mid-2010s, government intervention increased, particularly in renewable energy, where industrial self-sufficiency became a policy priority.

YEKA reflects Türkiye's national strategy of reducing energy dependence by ensuring that a portion of renewable energy infrastructure is manufactured domestically. Despite Türkiye's ratification of the Paris Agreement, YEKA is more focused on economic and industrial policy than on climate action.

Key Words and Concepts
YEKA emphasizes efficiency, competitiveness, and localization. Efficiency is framed in economic terms, referring to low-cost energy production rather than energy conservation or sustainability. Competitiveness is discussed in terms of Türkiye's position in the global renewable energy market, prioritizing domestic industry protection over open markets. The policy does not provide references to public participation, carbon neutrality, or just transition, which is in line with Türkiye's renewable energy expansion steered rather as a an industrial transformation.

Actors, Power, and Responsibilities
YEKA reinforces a top-down governance model in which power is concentrated in state institutions and large corporations. The Ministry of Energy determines where projects are located, while EMRA oversees regulation. Turkish manufacturers benefit from state protection, while foreign investors can participate only under strict conditions. Local energy cooperatives, independent power producers, and NGOs have no role in YEKA projects, meaning that renewable energy remains centralized and controlled by corporate interests.

Implied Power and Worldview
YEKA aligns with a state-led, industrialist worldview, where renewable energy is framed as an economic and technological priority rather than a public asset. The policy promotes a nationalist economic model, prioritizing self-sufficiency and industrial expansion and not focusing on decarbonization or social equity. Citizen or community-led energy models, participatory governance structures, and local renewable energy initiatives are not mentioned in the regulation. YEKA refers to large-scale investment from corporations, excluding decentralized or community-driven alternatives.

Metaphors and Symbols
The language in YEKA uses economic and security-based metaphors. This suggests that renewable energy is perceived primarily as an industrial and geopolitical strategy. The concept of energy independence is frequently emphasized, portraying renewable energy as a national (energy) security asset rather than a tool for environmental justice. The policy documents describe renewable energy projects as "strategic investments" and national industrial assets, which is inline with the perspective that frames Türkiye's transition as a state-led initiative rather than a market-driven or community-led effort.

Intertextuality
YEKA references past energy market laws and aligns with Türkiye's broader industrial policies. It builds on previous legislation, including the Renewable Energy Law No. 5346 (2005) and the Electricity Market Law No. 6446 (2013), which facilitated the liberalization of energy markets. While Türkiye is a signatory to the Paris Agreement, YEKA does not refer to carbon reduction targets, and emphasizes energy security and economic growth instead.

Connection of Micro-Macro Levels
YEKA reflects broader global trends of financialization in renewable energy, in which energy infrastructure is treated as an investment asset rather than a public good. The focus on large-scale tenders ensures that renewable energy development remains corporate-driven rather than decentralized. *While the EU emphasizes community ownership and energy democracy, the framing of YEKA keeps decision-making in the hands of the state and private corporations*. The emphasis on investment efficiency aligns with financialization trends and mostly excludes grassroots participation.

Policy Analysis of the Local Component Regulation (LCR)
The Local Component Regulation (LCR) was introduced as part of Türkiye's broader renewable energy strategy to reduce reliance on imported technology, strengthen domestic production capabilities, and ensure that local manufacturers benefit from the country's growing renewable energy sector (Local Component Regulation (LCR), 2016).). The regulation requires that a minimum percentage of equipment and technology used in renewable energy projects be sourced from within Türkiye. To enforce compliance, the government offers financial incentives, tax benefits, and preferential tariff rates to companies that meet the localization targets while restricting access to incentives for projects that fail to integrate domestically manufactured components.

Unlike the YEKA Regulation, which focuses on competitive tenders for large-scale renewable energy projects, LCR applies to all renewable energy developments in Türkiye. Its requirements cover wind turbines, solar panels, energy storage systems, and control equipment, ensuring that domestic manufacturers remain central to the renewable energy supply chain.

Although the regulation was introduced to foster industrial growth, it has also raised concerns about increased project costs, reduced international competition, and trade restrictions that could conflict with Türkiye's agreements with the EU and the World Trade Organization (WTO). By requiring companies to source components locally, the regulation limits foreign firms' ability to enter the Turkish renewable energy market freely, thereby protecting domestic industries while potentially discouraging foreign direct investment.

The regulation represents *a strong protectionist stance*, reinforcing Türkiye's broader economic goal of achieving *energy independence and self-sufficiency* in renewable technology production. By requiring companies to source a significant portion of their materials locally, LCR aims to strengthen domestic supply chains, create jobs, and encourage technology transfer. However, this approach also presents challenges in terms of market efficiency, competition, and long-term cost sustainability. LCR also has the potential to create barriers to entry for foreign investors, as compliance with localization requirements requires significant financial investment, partnerships with Turkish manufacturers, and long-term commitments to domestic production.

Stakeholder Representation
LCR primarily benefits Turkish manufacturers, government institutions, and large-scale energy developers, reinforcing a state-led industrial model. The Ministry of Energy and Natural Resources (MENR) is responsible for regulating compliance and ensuring that localization quotas are met, while the Turkish Standards Institute (TSE) plays a key role in certifying domestically produced components.

The primary beneficiaries of LCR are domestic renewable energy manufacturers, who gain a protected market that guarantees demand for their products. Turkish firms involved in the production of wind turbine components, photovoltaic panels, and storage technologies have seen increased investment and market stability as a result of the regulation.

In contrast, foreign investors and international energy firms face significant restrictions, as LCR limits their ability to source components from global suppliers. Many multinational corporations have been forced to either establish production facilities in Türkiye or partner with local firms to comply with the localization rules.

Local energy cooperatives, independent power producers, and small renewable energy developers are not mentioned in the regulatory framework, as LCR focuses primarily on large-scale industrial projects rather than community-led initiatives.

Historic and Social Context
Since the early 2000s, Türkiye has shifted from a market-liberalized energy system to a more state-controlled industrial policy, particularly in the renewable energy sector. The introduction of LCR aligns with Türkiye's broader economic strategy of reducing its trade deficit, strengthening domestic production, and positioning itself as a leader in renewable energy technology. Hence, LCR aims to contribute to Türkiye's energy independence and industrial self-sufficiency.

The regulation restricts access to Türkiye's energy market for European and international manufacturers and imposes local content quotas that may cause tensions in terms of international trade agreements.At the domestic level, LCR reflects a growing preference for state intervention in energy governance, where the government plays an active role in regulating investment, impacting supply chains, and prioritizing national industries over global market efficiency.

Keywords and Concepts
LCR consistently emphasizes industrial competitiveness, national security, and domestic economic growth, reinforcing a nationalist approach to renewable energy development. The concept of efficiency is framed in industrial terms, referring to the optimization of domestic production capabilities rather than the reduction of energy waste or increased sustainability.

The policy rarely mentions environmental concerns or climate mitigation strategies, reflecting an economy-oriented approach to renewable energy. There is no reference to citizen participation, decentralized energy models, or community ownership, suggesting that LCR is designed primarily as a tool for industrial expansion rather than an inclusive energy transition.

Actors, Power, and Responsibilities
Power under LCR is concentrated in government institutions and industrial corporations, reinforcing a centralized governance model in which the state plays a dominant role in regulating market access. The Ministry of Energy determines policy priorities, while Turkish manufacturers control renewable energy supply chains through protected domestic markets.

Excluded from the policy framework are small-scale energy developers, local communities, and independent energy cooperatives, meaning that renewable energy remains highly centralized and driven by large-scale investment rather than grassroots participation.

Implied Power and Worldview
LCR reinforces a state-controlled, protectionist approach, in which renewable energy is framed as a strategic industrial asset rather than a public good. The policy assumes that industrial localization is necessary for energy independence, even if it leads to higher costs and trade disputes.

This perspective does not consider alternative community-driven models of renewable energy development, assuming that large-scale corporate investment and state intervention are the only viable pathways for energy transition.

Metaphors and Symbols
The policy language frequently describes renewable energy projects as "national assets", reinforcing the idea that renewable energy is an economic and strategic tool rather than a social or environmental initiative. The use of phrases such as "energy sovereignty" and "domestic value creation" positions LCR as a defensive economic strategy, rather than a progressive sustainability effort.

Intertextuality
LCR builds on earlier industrial policies and trade protection measures, aligning with Türkiye's long-term goal of increasing domestic production across strategic industries. The regulation is not well-aligned with European Union policies, which emphasize open markets and trade liberalization, hence, may lead to tensions between Türkiye and its European trade partners.

Connection of Micro-Macro Levels
At the macro level, LCR reflects global trends toward financialization in renewable energy, where governments structure policies to attract investment rather than promote energy democracy. However, at the micro level, the policy places strict controls on market participation, limiting competition and discouraging foreign investors from engaging in Türkiye's renewable sector.

By maintaining a state-controlled approach, LCR positions Türkiye within a broader global debate about economic nationalism, trade protectionism, and the balance between energy independence and international cooperation.

Comparative Policy Analysis and Conclusions
On a practical level, YEKA has been more successful in attracting large-scale investments, particularly in wind and solar energy. However, the requirement for local production increases capital costs, making it harder for smaller firms to participate. LCR, while beneficial for Turkish manufacturers, has been more restrictive, discouraging some foreign firms from operating in Türkiye's renewable sector due to its rigid sourcing rules.

Both YEKA and LCR reflect Türkiye's shift away from market liberalization toward state-led industrial policy. In the early 2000s, Türkiye's Electricity Market Law No. 4628 introduced market liberalization, allowing private companies to participate in energy production. However, by the mid-2010s, state intervention increased, particularly in renewable energy.

YEKA was introduced in response to Türkiye's growing demand for renewables, providing a structured investment model that attracted both domestic and foreign capital. However, the requirement for localization aligned with Türkiye's broader economic goal of reducing reliance on imports. LCR was developed as a direct protectionist measure, reinforcing the nationalist

economic policy that gained momentum in the late 2010s. Unlike YEKA, which maintains some degree of market openness, LCR reflects a deeper shift toward trade restrictions and industrial self-sufficiency.

Both policies have been influenced by Türkiye's geopolitical concerns and its desire to maintain energy independence, even at the cost of higher investment barriers and strained trade relations with the European Union and WTO.

YEKA reflects a state-managed model, in which the government guides private investment through tenders while enforcing localization rules. It assumes that renewable energy must be developed through competitive, large-scale projects rather than decentralized energy ownership models.

YEKA and LCR build on earlier Turkish industrial policies, aligning with previous localization efforts in defence, the automotive industry and construction sectors. However, both policies conflict with EU trade regulations, highlighting the tension between Türkiye's national economic agenda and its international commitments.

Both YEKA and LCR align with global trends in financialized renewable energy markets, prioritizing investment and industrial expansion over community-driven solutions. However, while the EU promotes decentralized, citizen-owned energy projects, Türkiye's model keeps decision-making centralized in the state and corporate sector.

Both policies reinforce Türkiye's industrial self-sufficiency agenda, but their long-term effectiveness depends on how they balance economic protectionism with international trade commitments.

4.6 Case 4: Energy Communities in the Netherlands

Introduction and motivation

To meet the climate targets in The Netherlands there is a shift from natural gas to electricity, but also to reduce the dependence on Russian gas. However, the electricity grid is over-congested, and there is a strong need to find solutions. *One of the solutions could be found in Energy Communities (ECs) that contribute to the energy transition and are formed through collective actions of citizens participating in the energy system. ECs emphasise the importance of social innovation, not only technological innovation, in reaching the climate targets.*

The economic paradigms explored in Slingerland et al. (2024) illustrate four divergent views on how systems change varying in norms and values and how bottom-up or top-down drivers could define different futures (See section 4.1). In this case study, we examine how the debate between different alternative economic paradigms manifests in the policy discussion regarding ECs in The Netherlands. First, we provide more context on the current debate on ECs. Second, we define the scope and purpose of the policy document analysis through stakeholder mapping. Third, we analyse the policy documents based on an analysis framework (CDA) and examine to what extent (elements of) the four paradigms can be found in their strategies and plans. Lastly, we discuss these policy documents in terms of the paradigms.

Context on the current debate on energy communities

ECs aim to promote 'energy citizenship', and promote a *more active role for citizens in* the energy market, allowing them to (collectively) produce, aggregate and sell energy. ECs can play a role in reducing grid congestion, accelerating the energy transition, strengthening social cohesion and increasing the affordability of energy. They are locally embedded and address residents' interests (financially, but also concerning social connection and autonomy, for example). With more than 700 ECs and 110,000 members of ECs in the Netherlands (HIER, 2022; RVO, 2023), there is a diverse selection of communities to illustrate the various contexts that make these communities thrive. Over the last decades, diverse national and European policies have played critical roles in facilitating these communities to evolve. Various actors play an important role in facilitating energy communities to develop and evolve, such as the national government, energy companies and other organisations, such as EnergieSamen (the national umbrella organization and interest group for energy cooperatives).

We note the great promise of the role that ECs can play in the energy transition. However, there are still many bottlenecks at play, heavily dependent on the national policy context. Different normative views are possible regarding the growth of the share and the role that ECs should play in the future of the energy sector and in society. In the Netherlands, specifically, for example, the 1989 Electricity Act Experiments Scheme, the liberalisation of the energy market in 2004 and the SDE+ subsidy programme in 2010 (Norden, 2023) allowed for ECs to emerge. Furthermore, the *Energie Akkoord* was signed in 2013, including the 'zip code rose project' dedicated to community energy, in which consumers received a deduction in energy tax for collective renewable energy projects within their zip code area (Norden, 2023). Also, from 2015 to 2018, the new Electricity Act Experiment Scheme and the Dutch Green Deals facilitated experimentation again, through specific exemptions and eliminations of barriers, respectively (Norden, 2023). With its "Clean Energy for all Europeans" package (CEP), the European Commission formally recognised and instrumentally brought forward community energy projects, including definitions for "Renewable Energy Communities" (RECs) and for "Citizen Energy Communities" (CECs). The new concepts

introduced in the CEP set the course for a more active role of EU citizens in the energy markets.

Mapping of relevant documents: scope and purpose

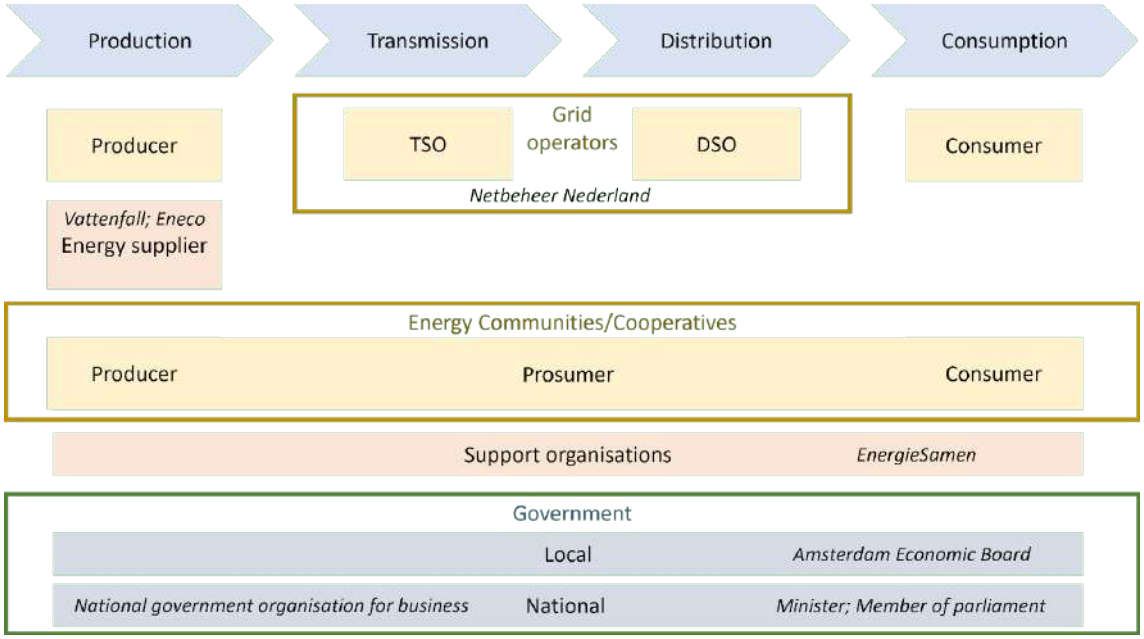

Figure 2 Scope of the policy document analysis: the key actors in the energy value chain from production to consumption, and the documents from specific actors (shown in italics).

Several key actors are involved in the energy communities in the Netherlands. The policy documents analysed in this research are mapped in terms of the stakeholders who authored them. The figure above illustrates the scope of the policy document analysis. Firstly, we analyse Netbeheer Nederland, an organisation representing the grid operators (TSOs and DSOs). Secondly, two policy documents were analysed from energy suppliers, Vattenfall and Eneco. Thirdly, two policy documents from the support organisation for energy communities, EnergieSamen, were relevant for analysis. Out of the government actors, a policy document from the Amsterdam Economic Board, at the local level, was analysed. At the national level, three documents from the national government organisation for business, a minister and a member of parliament were analysed. There are nine policy documents analysed in total of which three were analysed further with a critical discourse analysis (CDA), namely the documents by EnergieSamen, the minister of a political party and Netbeheer Nederland. The selection of these policy documents was based on having diverse actors, with different perspectives and different types of documents.

Analysis of alternative economic paradigms among key actors

This section elaborates on the analysis of the different policy documents to identify the perspectives of different actor groups, and specific actors (see Table 5) relevant for energy communities. We categorise the perspectives regarding the alternative economic paradigms with insights from the CDA.

Overall, the shift from natural gas (and fossil fuels more generally) because of the reliance on Russian gas is a significant motivation for Energy Communities, in addition to costs and grid

congestion. However, objectives are varied. *The national government focuses on policies to support pioneers*, and the national government organization for business, RVO, provides a national roadmap to develop a more cohesive development and implementation of energy hubs. Vattenfall, an energy supplier, with an energy cooperation, is in the research stage of how to provide a neighbourhood with heating, and an energy community organization, EnergieSamen, aims to reduce the price of energy for members of an energy cooperation. For grid operator, Netbeheer Nederland, their objective is to support more flexible and smarter use of electricity. Overall, all of the documents analysed *tend to focus on the economic and societal factors* and less attention is given to technological and environmental factors. Therefore, there is an emphasis on economic incentives (e.g. subsidies, reducing costs via collaboration and optimisation) and the strategies and programs overlap with these incentives. There are some references to laws and bills, but these are less concrete and detailed.

As the focus is on Energy Communities and cooperatives, it automatically involves citizens. Therefore, it is quite logical that there is a *strong bottom-up emphasis* (e.g. joining an Energy Community and being active in an energy cooperative). However, since we are focusing on the policy documents, there is also a top-down emphasis, where government, energy suppliers and other partners are responsible for facilitating the initiatives (e.g. facilitation programme for local and regional energy hubs). Therefore, several documents have a combined bottom-up and top-down focus. The documents from actors such as the national government (i.e. minister and member of parliament) and the support organisations (i.e. EnergieSamen) fit the post-growth paradigm, as they emphasise the responsibility of government and various partners to facilitate and bring down costs for energy communities. The grid operator representative (i.e. Netbeheer Nederland), and local government (i.e. Amsterdam Economic Board) emphasise a shift in values and norms and the citizens themselves as being key drivers, therefore, matching the Great Mindshift paradigm. The RVO emphasise a route map for collaboration, a more top-down approach with a specific mission, and where current values and norms would remain, while Vattenfall, see a large-scale aqua thermal project for a neighbourhood where citizens would not experience any change of behaviour, and would be facilitated by the energy supplier mostly. Therefore, these two documents can be categorized as the Mission Economy paradigm.

The insights from the CDA (specifically on documents from the minister, EnergieSamen and Vattenfall) show that the keywords and concepts are not explicitly related to growth or even sustainability, but rather *energy independence, reduced grid congestion and cost reduction, and facilitation in which the government, companies and energy cooperatives play a significant role in facilitating energy communities to thrive.* Of the documents analysed, even though it is mostly written in passive voice, they do include themselves as the actors needing to make or at least facilitate the change. The implied power and worldview, shows that all citizens within The Netherlands could be included, but energy communities are still more likely to emerge in suburban or rural areas, for long-term living, most likely with ownership of their home. The project on the neighbourhood Poelgeest (from Vattenfall), is specifically targeted to this neighbourhood. The policy documents were direct, no metaphors or symbolism were identified, and references to other projects were minimal.

Discussion

The alternative paradigms in light of these results. The key differentiation lies in the current vs. change in norms and values in the documents for this case study. Identifying whether the documents take more of a Mission Economy or Post-Growth (i.e. top-down) approach, or Green Growth or Great Mindshift (i.e. bottom-up). As mentioned in the results, several

of the policy documents emphasise both bottom-up and top-down, so which paradigms fit best? From this analysis, while it is essential to look at specific details of the drivers (e.g. facilitation via subsidies or providing a platform for citizens to start up an energy community), it hints at a combination of different paradigms.

Ideological tensions within the documents or between those documents and hegemonic policy/stated policy/related documents. This analysis shows that there are differences in how the energy communities should be facilitated and what problems they would solve. For example, depending on the actor, a reduction of grid congestion or reduced cost for citizens could be a main motivation. However, generally there is an emphasis on the importance of the energy communities, based on the policy documents analysed. This general consensus among actors could be explained, as the concept of Energy Communities is not so disruptive, and solves a range of different problems, not just environmental but also societal.

Actor group	Specific actor	Objective	Keywords and concepts	Paradigm
Grid operators (TSO/DSO)	Netbeheer Nederland	To support smarter and more flexible use of electricity, to combat net congestion	Bringing togheter demand and supply; Network-conscious behavior in a collective contest; active role of net-users; consumers and companies coordinate consumption	Great Mindshift
National government	Minister	Proposal for a policy to support pioneers and facilitate energy communities to scale up to allow for all people to participate in the energy transition.	Stimulate; facilitate; government; active rol; support; municipalities; financing; large costs; capital-intensive; law-making; obstacles; energy-independence; not profit-maximalisation; financial advantages; public acceptance; democratization; sustainable renovations; car sharing; collective heat pump and storage;	Post Growth
	Member of parliament	To support energy communities in their initiation and growth phase, as they develop towards a mature player.	interaction; central and decentralised; support by government; participative energy transition; citizen collectives; broad; collaboration other ministries; municipalities important role; bottlenecks; drop out early; shortage of capacity to support; expertpools; remove financial barriers; even playing field; help recruit diverse groups;	Post Growth
	RVO	The purpose of this national roadmap is to	energy hub; collaboration; accessibility and available	Mission Economy

		develop more cohesive development and implementation of energy hubs.	net capacity; invest together; renewable energy; access to energy markets	
Local government	Amsterdam Economic Board	To investigate the contribution of energy communities and energy hubs to combat net congestion	new terrain; civil-public-private collaboration; collective infrastructure; societal value creation, innovation for decentralised energy systems, strategic autonomy and resilience; system insufficiently designed; single energy provider; energy cost savings; earnings on energy production; limited financial advantages	Great Mindshift
Support organisations	EnergieSamen	How to get members of energy cooperation to not pay for their energy other than the cost price of sustainable energy production?	affordability, reliable; clean; safe; costs; sustainable, collective; cost-price; disruptive process innovation; consortium; everyone;	Post Growth
		To create a good balance between market, government and citizens, by focusing on the organising ability of residents through heat communities, you transform the heat market into one that meets the needs of residents.	vision; bill; energy bill; collaboration; neighbourhood; leading role; collective implementation power	Post Growth
Energy supplier	Vattenfall	Research what is necessary to provide more than 1000 houses in Poelgeest in Oegsgeest with heating from water heat as a source following a positive feasibility study.	agreements; both parties; contract; heating provision; sustainable; safe; reliable; exploration; choices; active role for citizens; codetermination; co-invest;	Mission Economy

Table 8 Overview of documents used in the Dutch case study of Energy Communities

4.7 Case 5: USA and seabed mining

The following table depicts the U.S. policy documents identified as relevant to seabed mining. The two documents chosen for the CDA are in bold.

Name of document	What type of document	Stakeholder	Main goals / Keywords
Hawaii Seabed Mining Prevention Act	**State law**	**Legislature of the State of Hawaii**	**Prohibit seabed mining in State of Hawaii**
Threat to the Domestic Supply Chain From Reliance on Critical Minerals From Foreign Adversaries and Supporting the Domestic Mining and Processing Industries	**Executive Order**	**President Trump**	**Supply chain security of U.S. domestic industry, independence from China**
Deep Seabed Hard Mineral Resources Act	Federal law	U.S. Congress	Interim domestic legal regime for deep seabed mining in international waters, pending adoption of an acceptable international regime. (UNCLOS)
Outer Continental Shelf Lands Act	Federal law	U.S. Congress	Mineral exploitation and development leases
National Environmental Policy Act	Federal law	U.S. Congress	Federal framework for environmental protection
Inflation Reduction Act	Federal law	U.S. Congress	Promote economic growth, address climate change, inflation, clean energy
America's Supply Chains	Executive Order	President Biden	Increase supply chain resilience, reduce dependence on other countries, critical minerals
House Report 118-125 – National Defense Authorization Act for Fiscal Year 2024	House Report accompanying the NDAA for 2024 (H.R.2670)	U.S. Congress, House Armed Services Committee	Domestic processing of seabed resources, domestic sourcing, critical and strategic minerals
Marine Mineral Resources Research Act	Federal law	U.S. Congress	Marine mineral resources research program, funding, assessment and exploration of mineral resources
Coastal Zone Management Act	Federal law	U.S. Congress	Protection of the natural systems of coastal zone, efficient management, beneficial use

Table 9 Overview of documents identified in the U.S. case

Seabed mining, i.e. extracting sediment and mineral resources from the seafloor, has received increasing interest globally and in the USA. This is not least *connected to increasing raw material demand for (green) technologies, and the U.S. ambition to reduce third-country imports*. The U.S. stands out in the global debate on deep-sea mining as one of the few countries in the world that has not ratified the 1982 United Nations International Convention on the Law of the Sea (UNCLOS).

As most deposits of *potentially valuable minerals can be found on the deep seafloor in international waters*, UNCLOS has established the International Seabed Authority (ISA) to issue permits for exploring and exploiting the abyssal seafloor. While no commercial deep-sea mining has taken place in international waters to date, island nations, green activists, and ocean scientists have issued a petition calling (Blue Climate Initative, n.d.) for a moratorium on seabed mining and have long criticised it for its environmental, cultural, and spiritual impact (Greenpeace, 2023). Several countries and the European Parliament have also supported suspending deep-sea mining.

A similar debate is apparent in the U.S. The existing policy framework establishes a licensing and permitting process for exploring and extracting hard mineral resources in both international and state waters. At the same time, there are a range of policies that do not explicitly target seabed mining but still likely have relevant implications. For example, environmental legislation requires environmental assessments that may inhibit seabed mining activities, while policies on strengthening domestic supply chains may foster industrial interest.

Beyond federal policies, *several state legislatures have issued bans on seabed mining*, highlighting the complexity of the political discourse. While most policies fall within the neoliberal or green growth paradigms, such bans adopt a growth-agnostic stance, prioritising environmental and social needs over economic ones. To account for this diversity, the present critical discourse analysis focuses on two documents from different ends of the spectrum: Executive Order 13953, “Addressing the Threat to the Domestic Supply Chain From Reliance on Critical Minerals From Foreign Adversaries and Supporting the Domestic Mining and Processing Industries” and the “Hawaii Seabed Mining Prevention Act” (HSMPA).

Historical, social, and institutional context

U.S. President Donald J. Trump authored Executive Order 13953 in September 2020. It was written during Trump’s first presidency, which upended the former liberal order by using trade measures to promote U.S. industrial and geopolitical interests. Protectionist trade policy was intended to ensure supply chain independence and increased competitiveness relative to other countries, particularly China.

Executive Order 13953 was clearly written in this context. Its explicit objective is to counteract the “undue” reliance on “critical” minerals from so-called “foreign adversaries”. As such, the main beneficiaries of this policy are U.S. industrial actors dependent on certain raw materials, while the potential social, economic, and environmental implications for society are largely disregarded.

While the Executive Order did not specifically target seabed mining, the Hawaiian Act is a direct reaction to increasing industrial interest in scaling up nascent seabed mining activities. It was adopted by the legislature of the State of Hawaii in 2023, after the Biden administration had adopted the Inflation Reduction Act that encouraged domestic mining. As some members of Congress proposed to promote or preclude domestic seabed mining, showing the pertinence of the debate, Hawaii joined the states of California, Oregon, and Washington in passing a ban. By banning seabed mining, the law explicitly aims to prevent damage and disruption to the marine life and environment while safeguarding people’s connections to the ocean and protecting existing ocean-dependent industries.

While legally only affecting Hawaiian state waters, the ban also sends a political message to the international community. Although the U.S. is not a party to the UNCLOS,

Hawaiian Indigenous representatives are attending ISA meetings as observers. There is interest in mineral exploration and potential exploitation in the Clarion-Clipperton Zone lying between Hawaii and Mexico, but state waters extend only three miles offshore. While representatives of Native Hawaiians stood in support of the ban (Yunker, 2024), potential "losers" include active deep-sea mining companies, such as The Metals Company and its contractor, Allseas, and, indirectly, countries interested in deep-sea mining in the ISA, such as China, Nauru, Mexico, and the UK.

Key words, concepts, and symbols

The contrasting paradigms of both policies are evident in the different language and concepts used, and in the symbols they evoke. The Executive Order focuses on the "domestic supply chain" for "critical minerals". The supply chain is understood in terms of the different economic activities involved – from exploration and mining to recycling and reprocessing of minerals, implying some support for a circular economy. Critical minerals are defined as those 35 minerals previously identified in a report by the Secretary of the Interior as "essential" to the economic and national security of the US.

Security considerations, both in the economic and military sense, are the main justification for the policy's aims. Its language evokes a state of (trade) war: it addresses the "unusual and extraordinary threat" to domestic supply chains from "foreign adversaries". This leads to the declaration of a "national emergency" and the need to "protect" the domestic mineral supply chain.

Such a protectionist approach is also meant to foster economic growth and develop "globally competitive, substantial, and resilient domestic commercial supply chain capabilities for critical minerals mining and processing". The "health" of the U.S. economy is highlighted, while the concepts of vulnerability and resilience are used to describe the state of the supply chain. Interestingly, reasons for vulnerability include natural disasters but are not connected to climate change. The environment and human rights standards are only mentioned in passing to reinforce the main argument, but there are no environmental conditionalities or considerations set for the mining industry.

The policy also mentions the aim to enable the U.S. and the rest of the world to "Buy American" for critical technology. Similarly, creating jobs for Americans is highlighted as a by-product of securing the domestic critical minerals supply chain, generally alluding to a sense of patriotism/nationalism.

In contrast, the Hawaiian ban frequently mentions marine life and the environment as something precious ("rich, diverse, and globally significant ecosystems", "biodiversity that may be comparable with tropical rainforests") that could be damaged or destroyed by seabed mining. The ban also highlights the "right that each person has to a clean and healthy environment" as one of its first arguments against seabed mining in state waters.

Connected to this, the law claims that banning seabed mining is in the "best interest of the people of Hawaii". The "strong spiritual, cultural, and economic connections" of the Hawaiian people to the deep ocean are mentioned as an argument in this context. More specifically, the law intends to protect Native Hawaiians' "sovereignty" and "ancestral lands and waters".

The Hawaiian ban uses different variations of the word “mining”, including “extraction” and “removal” of minerals from the seabed. “Minerals” are defined as “natural deposits of valuable minerals”, further defined by a concrete list of examples.

The HSMPA positions itself against seabed mining based on risk and uncertainty. It mentions the “unacceptably high risk of damage and disruption” that seabed mining poses to the marine environment, and its risk to the state’s “ocean-dependent industries”. It also states that the extent of marine biodiversity was still largely unknown, making its disruption by large industrial-scale mining “perilous”. Lacking knowledge and understanding, the Act argues for a precautionary approach to seabed mining, as “[h]istory is fraught with hard lessons about destroying what we do not know or understand”.

The ban also uses certain economic arguments, although concepts like growth or efficiency are absent. To undermine the economic case, it claims that state waters are unlikely to be a “marketable source for battery metals, the emerging global justification for extraction at the seafloor”. Instead, the HSMPA prioritises the preservation of other industries, which are implicitly assumed to be more important for the Hawaiian economy: commercial fishing, recreational fishing, and tourism industries – without discussing their social-ecological impacts. The Act evokes emotion by stressing risks to “the breathtaking beaches, shallow coral reefs, seagrass beds, and rocky reaches that help support a multibillion-dollar tourism industry”.

Actors and responsibilities

The two documents also differ in terms of the relevant active and passive actors mentioned. The Executive Order assigns responsibilities to federal agencies, notably to submit reports on concrete actions that must be taken to achieve the Order’s objectives. Therefore, the active problem-solvers are government agencies in terms of commercial and economic support, which will be received by domestic industry actors. For example, they are ordered to explore whether to impose tariffs, quotas or other import restrictions on China and “other non-market foreign adversaries whose economic practices threaten to undermine the health, growth, and resiliency of the United States”.

China is as such positioned as another actor, who is blamed for using “aggressive economic practices to strategically flood the global market for rare earth elements and displace its competitors.” Domestic mining and processing industries are considered relevant actors to foster the U.S. economy, while also being portrayed as victims to Chinese aggression. Other actors, like U.S. citizens or civil society organisations, are not mentioned in the report. However, the Executive Order also recognises the importance of cooperating with (unspecified) “partners and allies, including the private sector” to achieve federally determined objectives.

The Hawaiian ban on seabed mining discusses a broader range of actors. The main actor enacting the policy is the legislature of the State of Hawaii. The Hawaiian Board of Land and Natural Resources is also mentioned once as an actor who can approve sand collection to replenish beaches. Other than that, no further responsibilities are allocated.

However, different actors are implied in the text. The “public” or the (Native Hawaiian) people are referred to as having a right to a clean environment, while public interest is assumed to not be in line with risks resulting from seabed mining activities. This passive role is enforced by the assumption that “Hawaii's deep water column and seafloor are critically important to its people” – and therefore, implicitly, the state needs to protect them. This is also true for the

"sovereignty" and the "ancestral lands and waters" of Native Hawaiians. Nevertheless, it is highlighted that "Indigenous peoples, other citizens, scientists" have initiated the call for a global moratorium on seabed mining. This active role is also reflected in the ban's call for a precautionary approach to seabed mining by the "global community".

The marine environment is often described in a more active sense than human actors. Hawaii marine waters are "home to" ecosystems that "support" tourism, while the seafloor "has provided" compounds to help treat disease. Marine ecosystems are labelled as "communities"(of sponges, corals and other marine life), evoking a sense of similarity between marine and human life – especially as the law also appeals to the "global community".

The private sector, although in practice the receiver of the ban, is rarely labeled as an actor with power or responsibilities. Instead, the policy frames companies' seabed mining operations as processes ("industrial-scale mining") or technologies ("large machinery") that could cause damage, or as "facility or infrastructure" that, as a result of the HSMPA, will not receive permits for mining operations. Other industries that "depend" on the ocean are positioned as potentially at-risk from seabed mining. The only active framing of the private sector was used to demonstrate global skepticism towards seabed mining, by naming companies in technology and car manufacturing that require hard minerals as one of the actors who have called for a global moratorium on seabed mining.

Finally, other legislatures such as the states of Oregon, Washington, and California, but also the European Parliament, and 81 governments around the world are mentioned as actors taking active stances against seabed mining, to help justify the Hawaiian ban.

Implied power and worldview

Trump's Executive Order implies a worldview in which the U.S. is in a state of emergency due to the trade and security power imbalance with China. It creates an opposition between the Americans and the Chinese, contrasting the two countries in terms of their market principles. For example, it blames "non-market foreign producers" who "destroyed" "vital" jobs in the U.S., which creates a sense of homogeneity among American producers and workers. This contrast is also made in terms of human rights standards and "health and environmental damage", implying that such principles are important for the U.S. economy but not to China.

It is stated that the U.S. could have become a competitive producer of critical minerals if not for China "exploiting" its position in the market by "coercing" industries to relocate to China. Expanding and strengthening domestic mining and processing is positioned as a safeguard against such attempts by "adversaries or strategic competitors" to "harm" the U.S. economy and military readiness.

Notably, critical minerals are deemed necessary for the military, fracking, infrastructure, transport, electricity, and electronics industries, while green industries are not stressed. This implies a federal ambition to support specific industrial interests at the expense of others. Indeed, there are orders to reconsider the interpretation of former legislation that may hinder the growth of the mining industry.

As limited cooperation with certain partners is acknowledged as necessary for U.S. resilience and reduced vulnerability, the Executive Order stresses that this would allow the U.S. to support these

partners in building reliable critical mineral supply chains within their territories, based on responsible mining standards.

In the Hawaiian ban, assumed public interest and Indigenous concerns, and environmental protection are deemed more important than economic concerns. By prioritising certain, already existing, local industries over others, the ban promotes a specific vision of industrial development that is assumed not to harm the environment or Indigenous communities. Notably, "spiritual, cultural, and economic connections" are mentioned on par with each other, implying the view that some economic uses of the ocean do not undermine its importance for local communities.

Activities to conduct research by an "educational, scientific, or research institution or a governmental agency" and collect sand from coastal waters are explicitly permitted, showing that some activities in the marine environment are deemed necessary.

Intertextuality

Different references to other policies and legislation are made to justify each document's provisions. The Executive Order refers to a broad range of existing policies, including the U.S. Constitution, the International Emergency Economic Powers Act, the National Emergencies Act, and section 301 of Title 3, United States Code. It follows Executive Order 13817 of 2017, "A Federal Strategy To Ensure Secure and Reliable Supplies of Critical Minerals". Furthermore, the Executive Order asks different government actors to investigate whether existing provisions in the Energy Policy Act and the Energy Independence and Security Act can be interpreted in a way that "better promotes the expansion and protection of the domestic supply chain for minerals". For instance, the provision of the Energy Policy Act that would support projects that may "avoid, reduce, utilize, or sequester air pollutants" or GHG emissions is to be reinterpreted to promote domestic growth.

The HSMPA refers to analogous bans of seabed mining in Oregon, Washington, and California, the European Parliament's resolution on a moratorium, and 81 members voting against seabed mining in the International Union for Conservation of Nature World Conservation Congress, to show the growing domestic and international support for such bans. It also cites Article XI, section 9, of the state constitution, which enshrines the right to a clean and healthy environment. While arguing against seabed mining on the basis of potential adverse environmental and social consequences, the ban does not provide any sources for these assumptions. Finally, the policy is connected to the Hawaii Revised Statues, as it amends Chapter 190D by adding new rules prohibiting seabed mining.

Conclusion

Overall, Executive Order 13953 is driven by neoliberal values, as it aims to support the growth of the domestic mining industry without environmental or redistributive considerations. In contrast, the Hawaiian ban stresses the values of environmental protection and Indigenous rights, along with support for the tourism and fisheries industries*. It undermines the narrative supported by the federal government that seabed mining is important for strengthening domestic supply chains or that it is needed for the green transition.* Nonetheless, it conveys the view that other economic uses of the marine environment align with Indigenous values.

5 Cross-Cutting Analysis

The following section discusses six themes derived from a combination of the empirical material in case studies presented above and the four alterantice growth paradigm in Slingerland et al. (2024).

1) ***The view on change and its drivers*** discusses who the case sees as the main stakeholder for driving change; 2) ***Power and the world stage: The EU's ambition to become a competitive global actor*** describes the EU's ambition of becoming a competitive global actor and highlights the tension between solidarity and self-sufficiency; 3) ***Shaping the future: How should the green energy transition unfold?*** reflects on how the case studies view the relationship between the market and the state in achieving sustainability and the green energy transition as well as the tensions between the globalist and protectionist views; 4) ***Approach to technology*** describes the extent to which technology and technological development is regarded as fundamental to the green transition; 5) ***Enforcement of alternative economic paradigms*** argues that alternative(s) (to) growth paradigms are to a lesser extent enforced in policy-making and are to be found in more visionary documents and 6) ***Sustainability and its relation to growth - hopes and tensions*** presents the paradox between the wish for sustainability while at the same time ensuring industrial and economic growth.

5.1 The view on change and its drivers

Slingerland et. al 2024 classify the alternative economic paradigms Green Growth, Mission Economy, Post-Growth, and Great Mindshift based on the paradigms' view on change in norms and values, and top-down or bottom-up approach as in who is the main stakeholder for change. The following section will address how the case studies and EU principles align with the paradigms along these axes:

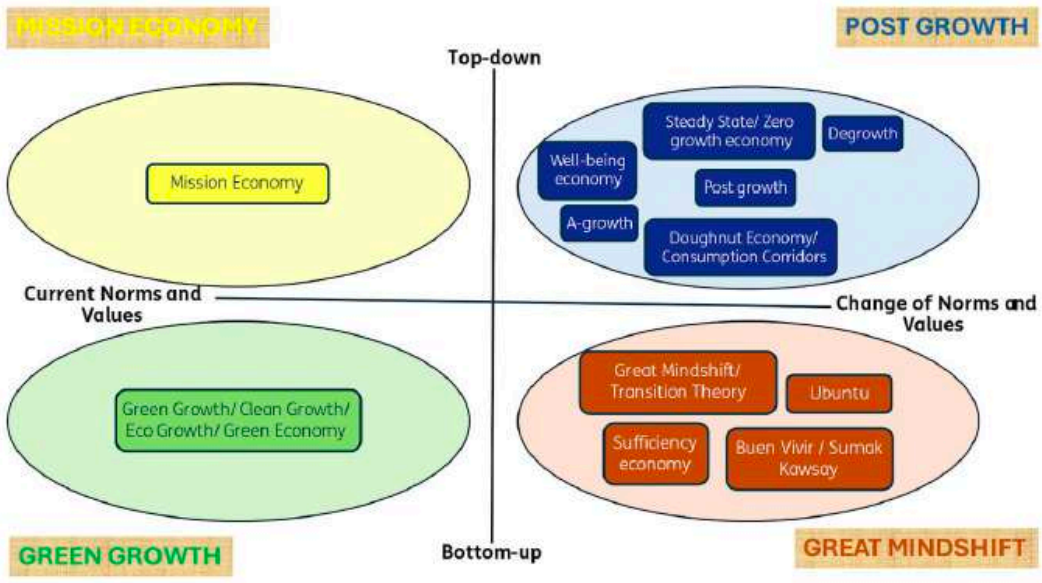

Figure 3 Alternative economic paradigms identified in Slingerland et al. 2024

The table below depicts how the four alternative economic paradigms looks at change in norms and values.

	Green Growth	Mission Economy	Post-Growth	Great Mindshift
Norms, values and behavioural change	Current norms and values are not influenced by policy-making. Limited/no behavioural change policies.	Current norms and values are hardly influenced by policy-making. Limited behavioural change policies.	Changing current norms, values and behaviours towards more ecocentric views with strong governmental policies is considered a prerequisite for achieving planetary and social targets	Changing current norms, values and behaviours towards more ecocentric views and a focus on self-sufficiency is considered a prerequisite for achieving planetary and social targets

Table 10 The relationship between change in norms and values and alternative economic paradigms

All cases demonstrate a top-down approach in both setting and achieving goals. This is evident in the state's central role in setting agendas, implementing regulations, making investments and fostering industrial growth. At the EU level, the significance of the state is further underscored, as member states play a key role in shaping and executing the Commission's politics and guiding principles. The EU member states - through the von der Leyen Commission – have been important stakeholders to initiate change towards what they perceive as a more sustainable trajectory for Europe. This emphasis on state involvement aligned with the country's cases and EU principles, is aligned with the Mission Economy paradigm. Strategies such as the Green Deal and Twin Transition Strategy serve as "moonshot" missions that set the goals of how Europe should develop itself towards sustainable living. A key example is the Commission's ambition for Europe to become the first climate-natural continent or the Norwegian government's wish to make Norway a data centre nation.

The analysis of each case further highlights the government's crucial role in formulating and setting the agenda for the green transition. This is particularly evident in the cases from Norway, Finland and Türkiye while playing a lesser role in the U.S. and Dutch cases. Norway's data centre strategy follows the "moonshot" mission of establishing the country as a data centre nation, taking global responsibility for sustainable data storage while at the same time exploiting this new resource to gain economic growth. In Finland, the Prime Minister's Government Program envisions the country as a global leader in clean energy, fostering a "clean economy" to drive national prosperity and future growth. In Türkiye, the government has played a significant role in the renewable energy sector over the past decade, acting as a key stakeholder in introducing large-scale investments and localization programs.

The establishment of Energy Communities (EC) in the Netherlands appears to be less dependent on the government's agenda, even though national governmental stakeholders are involved by determining the conditions for activities of Energy Communities in the energy sector via the 2024 energy law. One explanation for this difference between the Dutch case and the others may be that EC policies focus on promoting energy citizenship, adopting a more bottom-up approach to change. In contrast, policies in the other cases are more directed towards industrial development, where government actors play a more active role, making them more top-down-oriented.

The U.S. case, however, reveals tensions between different levels of government, particularly between the federal and state levels. At the federal level, the President has prioritized U.S industrial and geopolitical interests, including the extraction of sediment and mineral resources from the U.S. seafloor. One area of interest in that regard is Hawaii, but the state has chosen to oppose federal policy by implementing a ban on seabed mining, arguing that the federal initiative poses a threat to marine and human life. This conflict underscores the potential for tensions and frictions between different levels of government, as political and ideological differences can lead to disagreements between governmental actors.

Political and ideological *disagreements between different levels of government (national versus local government, federal versus state, EU level versus member states) present a potential for conflicts and gaps that may hinder the development of new future pathways.* Although the cases in this Green Paper do not explicitly highlight such conflicts, it is evident that, for example, the EU's ambition to create a unified energy community within the Union is challenged by Finland's desire to utilize its own natural resources for self-sufficiency, as well as by Türkiye's nationalistic energy policy and economy. *A joint agreement on a common pathway toward a greener future would help ensure a fair and achievable green transition.* By aligning policies, supporting vulnerable groups, and facilitating global and regional cooperation, such an agreement can promote a more coordinated and effective approach to sustainability, and facilitate global and regional cooperation.

5.2 Power and the world stage: The EU's ambition to become a competitive global actor

The EU's guiding principles emphasize that sustainability is not only about environmental responsibility but also about growth and competitiveness. A key concern in the Draghi report (2024) is that slow growth is causing the EU to fall behind economically and technologically, losing its ground to the U.S. and China. To make the EU and Europe more competitive, economically secure, fair and strategically autonomous, increased growth is suggested as the main solution.

The competition between the EU, China and the U.S. is also highlighted in the case analysis of seabed mining. Similar to the EU, the U.S. is strategically working to enhance its global market competitiveness by aiming to reduce their dependencies and imports from third-countries. This focus on growth as a means of ensuring competitiveness can be interpreted as a protectionist approach designed to foster economic expansion and develop globally competitive and resilient domestic supply chains. However*, a sustainability strategy rooted in protectionist growth policies may pose a challenge to achieving a green transition that remains within planetary boundaries*. This is because protectionit policies can among others 1) limit global cooperation prioritizing national economic growth which can lead to resource overuse, fossil fuel dependency, and higher emissions; 2) slow technology transfer by limiting the access to innovations, and 3) reinforce resource inefficiencies by limiting global access to e.g. raw materials needed for the production of "green" technology. Combined factor such as these can ultimately hindering sustainable development, *stressing the importance of cooperating in the green transition*.

While the EU competes with the U.S. and China to enhance its global competitiveness through growth, it also has the power to influence and legislate its member states and influence other associated countries. The introduction of the Green Deal and the Twin Transition Strategy has had an impact on fostering sustainable growth across Europe. The EU's agenda-setting power is

evident in Norway despite not being a part of the EU. The Green Deal and Twin Transition framework have been used as key references to justify the need for "green" data centres. These initiatives argue for the role of sustainable data centres in the green transition in which Norway can offer such green data storage. The EU and the Commission therefore play an important part in setting the agenda and formulating "moonshot" missions of how member states and other European countries should work with the green transition and what (energy) transitions are necessary to make societies more sustainable. And, is therefore also important in future

Even though the EU's visions and strategies influence European countries, all countries are themselves stakeholders on the global stage. This is evident in the ongoing discussion about energy supply and sufficiency in Europe, especially after the Russian invasion of Ukraine. The Commission's strategy is to create an energy community with and between the EU and its members and allies. However, cases such as those from especially Finland and Türkiye show that *there are tensions between self-sufficiency and solidarity* where the former seems to be important for national sovereignty and competitiveness. Both cases highlight the countries' regards being self-sufficient with increased shares of renewable power is currently the primary goal of any energy transition making (energy) solidarity a secondary concern. It should be noted that Finland and Türkiye have been dependent on Russian energy before the invasion of Ukraine, such as on gas, coal, oil, and biomass for energy. However this has been largely phased out. This *protectionist and nationalistic tendency can make the work of finding joint pathways for sustainable futures more difficult* as cooperation of the development of renewable power is an important part of the green transition.

	Norway	Finland	Türkiye	Netherlands	U.S.	EU
Solidarity versus self-sufficiency	Norway wants to be solidaric by offering green, sustainable data storage, while at the same time having economic growth.	Finland will improve its self-sufficiency and security of supply in order to stay competitive and have economic growth.	Türkiye's renewable policy regulation promotes a nationalistic economic model, prioritizing self-sufficiency and industrial expansion and not focusing on social equity.	Solidarity in the meaning of letting the citizens be a part of the green transition. Self-sufficiency in regard to the distribution of energy outside the Netherlands.	Self-sufficiency and independence from third-country supplies are important arguments for the need to extract raw materials from the seabed floor.	Solidarity is to be promoted within the EU and thereafter Europe, but this eurocentric solidarity is also based on the EU's wish to be self-sufficient and to be competitive.

Table 11 The cases view on solidarity versus self-sufficiency

5.3 Shaping the Future: How should the green energy transition unfold?

A key tension between the guiding principles of the EU, the country cases and the alternative paradigms lies in the question of what a just and inclusive green energy transition is supposed to look like. The European Green Deal underscores the importance of making the green transition a fair and inclusive one, stating that it "must put people first, and pay attention to the regions, industries and workers who will face the greatest challenges". However, the cases highlight a contradiction between this statement and the current implementation of policies that prioritise industrial and economic development over societal involvement and change. The following section explores four different stances adopted by the cases studies: 1) The market as the main mechanism for ensuring a green energy transition, 2) protectionist and nationalistic approaches to the renewable energy sector, 3) the importance of citizens and bottom-up perspective in making new futures, and 4) a globalist approach to equity. The differing approaches underscore that the identification of key mechanisms and actors by which the green energy transition is to be achieved has significant implications for its development and the emphasis on justice and equity

A first stance sees the market as the main mechanism for ensuring a just green energy transition, and as such making this stance related to the Green Growth paradigm. Such a stance is evident in the Norwegian and Finnish cases, although they both illustrate that the market works best with some governmental intervention. In this stance *the market is posisioned as the basis and is setting the ground rules for the establishment of new technologies used in the green transition*, but there is little to no focus on how people should be involved in the green transition.

The establishment of data centres in Norway will best be achieved by letting the market do its work and in that way exploit the data driven economy to its fullest. The data centre industry is regarded as a market in itself, where public and private actors meet in the competition of offering the best services at the lowest cost. The Norwegian government sees global actors, such as multinational tech companies, as important parts of the market as they enter Norway's national markets to invest in data centres. Norway needs to become an attractive country for foreign investment not only so that its economy can grow, but also because it wants to take global responsibility in offering green data storage solutions. If the market is mostly left alone to do its work, but with some governmental and economic initiatives, the green and clean global data centre industry in Norway will thrive, thus ensuring the transition towards a green digital future.

Similarly, the Finnish case shows that the market is seen as the main tool for sustainable transition where Finland must use its competitive advantages to grow and become a forerunner in clean energy and climate footprint with its exports. The Government Programme highlights the importance of technological and industrial development to achieve carbon neutrality by 2035. However, it does not adequately address the just distribution of wealth and opportunities within Finland although stressing the need to distribute energy to Eastern Finland for security reasions. Implicitly, the focus of both the Norwegian and Finnish cases is an alignment with Green Growth and the assumption that jobs will inherently lead to social sustainability, without any reference to the redistribution of wealth.

A second stance is taken by countries such as Türkiye and the U.S. where *protectionist and nationalistic policies are a basis for the distribution of energy where national independence is the primary goal of the policy*. The U.S. has an ambition of being independent on third-country

imports, therefore arguing the need for national extraction of minerals on its seabed floor in order to meet the demand for raw material for green technologies. As such, the U.S. case is an example of a protectionist trade policy to ensure supply chain independence and its increase competitiveness against other countries.

The Turkish case is an explicit manifestation of how the state regulates the energy market in order to ensure self-sufficiency before solidarity. Türkiye's renewable policy regulation promotes a nationalistic economic model that prioritizes self-sufficiency and industrial expansion over social equity. The importance of energy independence is based on security concerns, portraying renewable energy as a national (energy) security asset rather than a tool for environmental justice. Energy infrastructure is not regarded as a public good, but as an investment asset mirroring the financialization of the renewable energy sector. While the EU emphasizes community ownership and energy democracy, the Turkish case illustrates the wish for keeping decision-making power and energy ownership in the hands of state and private companies. Local energy cooperatives, independent power producers and small renewable energy developers are not mentioned in the regulatory framework, and as such they are brused aside for large-scale industrial projects rather than community led initiatives. The policy documents from Türkiye represent regulations that are not well aligned with EU politics, which emphasizes open markets and trade liberalization. At the micro level, the policies put strict controls on market participation, limiting competition and discouraging foreign investors from engaging in Türkiye's renewable sector.

A third stance is found in the Dutch case. Energy communities in the Netherlands offer a *bottom-up approach to justice and solidarity, focusing on societal change* rather than just the (re)distribution of energy. Economic incentives drive these initiatives, while technological and environmental factors play a lesser role. Key motivations include energy independence, reducing grid congestion, and lowering costs for citizens. Although policy documents emphasize citizen involvement in the energy transition and suggest that all Dutch inhabitants should be included, energy communities are more likely to emerge in suburban and rural areas. They align with the EU's vision of a fair and democratic energy sector by involving citizens as key stakeholders, alongside governmental, market, and support organizations. While the case highlights bottom-up participation as essential for achieving fairness, it does not define what a just energy distribution looks like, nor does it address national or international solidarity beyond stating that Dutch citizens are the policy's primary focus. Regardless, this is the case that perhaps comes closest to embodying the Great Mindshift paradigm, which involves local governments redistributing wealth within their own areas and emphasizes bottom-up citizen participation in policymaking.

A fourth stance embodies thought from both Great Mindshift and Post-Growth paradigms, and centres on the need for the redistribution of wealth from the Global North to the Global South to align principles of equality. These paradigms emphasise a strong North/South redistribution of wealth to rectify current and historical injustices. This stands in strong contrast to the protectionist policies promoted in the case studies and at the EU level. For instance, the U.S. case on seabed mining highlights a protectionist approach. Executive Order 13953 emphasizes the need to secure domestic supply chains for critical minerals, framing it as essential for national security and economic growth.These examples illustrate the tension between the globalist focus on justice in the 'mindset shift' and 'beyond growth' paradigms and the protectionist, growth-centric policies observed in the case studies and at the EU level. This highlights that although equality and democracy are key EU values the case studies suggest that these values are not always central

to implemented policies, often being sacrificed for growth or assumed-to-follow growth.

What is a fair and inclusive energy transition towards a new sustainable pathway supposed to look like? The cases in this Green Paper illustrates that, as of now, there is no definite answers to this question and that an answer to such a question are normative, depending on underlying worldviews or storylines that are adopted. *Different considerations are made important by different actors, countries and regions, such as those that put economic growth, industrial and technological innovation, self-sufficiency and protectionism first, while others prioritize societal transformation*.The tensions and paradoxes in all country cases are also put into play in the guiding principles of the EU. The balance between self-sufficiency and solidarity stands out as an important question when asking what a fair and inclusive green, energy transition may look like. On the one hand, the importance of being self-sufficient is evident in all cases, and the Commission argues that European self-sufficiency is important with regards to its relations to Russia and Europe's ability to ensure economic growth, be competitive and reach the climate targets set for 2030. On the other hand, the Commission highlights the importance of building an energy democracy to make a solidaristic distribution of energy within the EU. How should one unite these positions?

	Green Growth	Mission Economy	Post-Growth	Great Midshift
Redistribution of wealth	There is no North/South wealth redistribution. Within countries there is limited wealth redistribution	There is no North/South wealth redistribution. Within countries there is limited wealth redistribution	There are strong North/South redistribution policies and redistribution policies within countries	Local governments redistribute wealth within their own areas.

Table 12 The alternative paradigms' take on redistribution of wealth

5.4 Approach to technology

Technology and technological innovations play different roles in both the alternative economic paradigms and the cases in this Green Paper. The following section explores how technology is approached in both the alternative economic paradigms as well as in the case studies. The table below shows how the four alternative economic paradigms approach technological innovation in the making of new futures.

	Green Growth	Mission Economy	Post-Growth	Great Mindshift
Technological innovation	Technological innovation is strongly stimulated by general, technology-neutral financial instruments	Technological innovation is strongly stimulated by direct governmental technology choices and instruments	Technological innovation is stimulated by a clear preference for local, small scale technologies and public/citizen ownership	Technological innovation is stimulated by a clear preference for local, small scale technologies and public/citizen ownership

Table 13 The alternative paradigms' views on technological innovation

The guiding principles of the EU clearly echoe techno-optimism arguing that technology and technological innovation are important factors to succeed in making a greener future for Europe. The European Green Deal states that new "green" technologies and disruptive innovation are necessary for achieving the main objective of the Deal, making Europe the first climate-neutral continent in the world. In addition, the advancement in both clean and digital technologies is important for the EU to be competitive. Therefore a *large-scale deployment and demonstration of new technologies across all sectors and the single market is necessary for building new innovative value chains that foster the green transition*. Digitization and digital technologies are particularly important in this regard, and the Twin Transition Strategy is made to highlights the fact that a fundamental digitalization of our societies is a prerequisite for the green transition to happen.

All cases in the Green Paper demonstrate an optimistic view on technology by arguing that technological innovation and development are drivers for the green transition. In this way the cases are aligned with those alternative economic paradigms that argue for "current norms and values" such as Green Growth and Mission Economy. The case study of Energy Communities in the Netherlands is to some extent challenging the role of technological innovation, arguing that societal innovations are just as important as the technological ones. In some ways this positions the Dutch case closer to "change in norms and values" and therefore associated with paradigms such as Post-Growth and the Great Mindshift.

	Norway	Finland	Türkiye	Netherland	USA
The purpose of technology in the green transition	Technological innovation, e.g. data centres, are seen as fundamental for society's transition towards a greener future	Technological development, e.g. wind and solar power plants, are regarded as essential for Finland to become a forerunner in the clean energy transition	Technological advancements in the renewable energy sector are seen as fundamental for reaching Türkiye's international climate commitments	Technological innovation is important in Energy Communities, but is seen as equally important as social innovation	The need for the development of green technologies, e.g. battery metals, is a seen as a global justification for extraction of minerals at the seafloor

Table 14 The cases view on the purpose of technology

*What is **missing** from this techno-optimism, are discussions of how technological innovation and digitalisation will be directed to help society stay within planetary boundaries*. Since almost all cases position themself within current norms and values with regards to technology, growth and consumption are a basis for technological innovation. The current approach to technology and digitalisation, which primarily aligns with Green Growth, suggest that the integration of a Mission Economy approach that focuses on climate goals but minimises ecological stability, might help with directing investments in technological development. *Furthermore, the belief that technology itself has the power to transform our societies into greener ones, assumes that we can continue on the current growth trajectory without introducing sufficiency policies*. It thus rejects the stances from Post-Growth and the Great Mindshift that focus on reducing consumption to minimise society's reliance on uncertain technological development.

This is particularly evident in the Norwegian case where the government sees the growth in the data centre industry as an important part of the new industrial development avenue of the Norwegian state, while simultaneously arguing that this new industry will make the green transition happen. However, the strategy does not make a convincing argument of why increased digital consumption is sustainable and green. Part of the digitization process is of course important, e.g. health data storage, banking systems, etc., but many data centres are built in order to save the data generated by social media and internet use for pleasure and entertainment e.g. streaming of TV shows and films. A real discussion of how much digitization and data storage, as well as technological innovation, is actually needed should be included in finding future pathways to a fair, sustainable and resilient Europe.

5.5 Enforcement of alternative economic paradigms

In what way and to what extent are alternative economic paradigms enforced in today's policy-making compared to growth based paradigms? The different cases in this Green Paper are examples of policies with different degrees of enforcement:

	Norway	Finland	Türkiye	Netherlands	USA	EU
Type of document	Governmental **strategies**	Government **Programme**, Participation and **Evaluation Plan**	Renewable energy resource **regulation**, local component **regulation**	**Proposal** for policy support, grid operator and support organization **support**	Presidential **Executive Order**, Hawaii Seabed Mining Prevention **Act**	**Strategies** from the Commission, Dragi-**report**

Table 15 Types of documents used in critical discourse analysis

The table above provides an overview of the types of documents included in the case-analysis. As each case does not necessarily represent one of the four alternative paradigms, but rather is a combination of many, it is difficult to conclude if some of the alternative paradigms are more enforced than others. At the same time the cases illustrate that it is evident that many of the documents are at a strategic and visionary level limiting the extent to which they have to be followed by actors. Exceptions to this are the U.S. and Türkiye cases that are based on documents which actually are regulatory policies.

The cases from Norway, Finland and the EU principles show how sustainability policies are formulated as visionary “moonshot” missions where the government or the Commission sets goals and strategies for future policy-making for a green transition. In contrast, the case from Türkiye illustrates how renewable energy policies are enforced through regulations where private investments are encouraged within a framework of state intervention. In the U.S. there is a conflict between enforcement of the presidential order with the prevention act from the state of Hawaii. The Dutch case, which is the most associated with changes in norms and values, includes proposals for policy support together with proposals/strategies from both grid operators, support organizations, and interest groups that together form important parts of the establishment of Energy Communities. Rather than being enforced this example highlights how policies that transfer the flow of resources to local actors are integral to incorporating the Post-Growth and the Great Mindshift paradigms.

One way to analyze policy documents is by examining their degree of enforcement. Some, such as laws and implemented regulations, carry a high degree of enforcement due to their binding legal status and mechanisms for compliance. Others, like strategies and agendas, have a lower degree of enforcement, serving primarily as guiding frameworks rather than legally mandated directives. In this analysis, most documents fall into the latter category, with the notable exceptions of the U.S. and Türkiye cases.

For instance, the guiding principles of the EU shape the work of its institutions and member states, but they do not impose direct legal obligations. Similarly, Norway's data center strategies outline a vision of the economic opportunities associated with data centers rather than enforceable policy measures. Finland's Government Program represents the Prime Minister's and government's political agenda, articulating a vision for a "strong and committed Finland" rather than imposing strict regulatory action. In the Netherlands, Energy Communities emerge from aspirations to enhance energy independence and cost savings for citizens, reflecting voluntary collective action rather than state-enforced policy.

What is missing from these cases and their policy documents is the power to enforce alternative economic paradigms. While they may promote new economic directions, they lack the legal authority and mechanisms to mandate change through alterantive economic paradigms. To put Europe on a more sustainable path, sustainability and alternatives (to) growth policies must be made with some degree of enforcement before putting into play. Although it is important to formulate alternatives in political agendas and so forth, alternatives to growth would much more impactful if they were formulated in documents and policies that have a stronger degree of enforcement. Whereas, by formunlating alternative economic paradigms as mere visions for the future, they risk being overrun by existing economic paradigms such as neoliberal growth.

5.6 Sustainability and its relation to growth – hopes and tensions

During the last decade there has been a push towards sustainability with the term playing a central role in public policy and business strategy. However, despite this focus, the world is becoming increasingly unsustainable, exceeding multiple planetary boundaries. There is a lot of money to earn and strategic advantages to achieve by producing sustainability (Røyrvik & Johansen, 2024). The term "sustainability" evokes different associations depending on the context in which it is used, making it challenging to define precisely. A common association when talking about sustainability is that the term has something to do with climate change and efforts to live within planetary boundaries. This way of conceiving sustainability is mirrored in all cases in this Green Paper, but sustainability is also presented as something *more* than just a green path to a better society; it is a representation of a possibility for new ways of growing - economically, technologically and industrially. Sustainability is therefore seen as both a way to make a better future while at the same time ensuring economic growth and prosperity. This view is fundamental in the EU guiding principles which frames the European Green Deal as a "growth strategy that protects climate". Growth is still an important part of today's policy-making and is a major factor in how countries and societies can become sustainable.

	Norway	Finland	Türkiye	Netherlands	U.S.	EU
Sustainability and growth	Technological, industrial and economic growth are important parts of the transition to become green and sustainable	To create a clean economy in Finland, the growth in investments, jobs and value is necessary. The growth in clean energy technology is a prerequisite for the green transition	Renewable energy is seens as an investment asset that can drive economic and industrial growth	Economic growth and technological advancements are not seen as the primary goals of Energy Communities. Sustainability is not framed with a reference to growth	Exploitation of raw materials and growth is necessary in order to produce green technologies	Increased competitiveness, growth and innovation are fundamental for making Europe the first climate-neutral continent in the world

Table 16 The relationship between sustainability and growth identified in each case

The cases demonstrate different approaches to sustainability and growth. The Norwegian government's data centre strategies exemplify how sustainable new green industries are perceived as new possibilities for exploitation and growth. The government argues for the need for green data storage capacities to ensure a green transition in Europe and this capacity is something that Norway can offer. At the same time as a data centre is a new green technology, it represents a new resource that the government wants to exploit to its fullest to make Norway grow in terms of number of jobs, infrastructure and GDP. The same logic is seen in the Finnish case where e.g. solar power plants are conceived as clean technology which enables Finland to use its competitive advantages in order to have "clean growth".

The U.S. case presents itself with a paradox, namely that the extraction of raw materials on seabed floors is a prerequisite for the production of new green technologies. The Hawaiian State's ban on such an extraction is grounded on the critiques of seabed mining, arguing that there is too much risk and uncertainty of damage and disruption to the marine and human environment. This paradox is just one local manifestation of a general challenge when discussing what sustainable development is: Is damage, ruination and exploitation of (untouched) nature a part of building new greener futures? It would seem like the majority of the cases in this paper would assume so. Building data centres in Norway requires a lot of land area; to ensure "clean growth" in Finland one builds solar plants on old peat production areas; to make green technologies in the U.S. it needs materials from the seabed floor. When technology and industrial development are an important part of the green transition a conflict seems to arise between the preservation of nature and growth.

Slingerland et al. (2024) propose four alternative economic paradigms: Green Growth, Mission Economy, Post-Growth and the Great Mindshift. The fundamental tension between sustainability and growth is particularly evident in both Green Growth and Mission Economy. Both base themselves on a growth-friendly logic where sustainable living is to be achieved by further growth in society. One explanation of the importance of growth in these two paradigms

is that they are classified as being based on current norms and values. This means that politics, economy and society are based on the principles of the current dominant way of thinking i.e. neoliberalism. In contrast, Great Mindshift and Post-Growth offer potential strategies to minimise these tensions by decoupling the notion of sustainability away from growth and focusing on social well-being and living within our economical limits.

5.7 Concluding remarks

Table 3 provides an overview of the key feutures of the alterantive economic paradgims Green Growth, Mission Economy, Post-Growth and the Great Mindshift. The cross-cutting analysis above is based on important themes that are found in the empirical material from the case studies, and is therefore not based on the key fetures of the paradims as such. Although, some concluding remarks on the alignment between the key feutures of paradigms and case studies can be made. In most cases, the government takes a **strong and direct leading role**, a defining characteristic of Mission Economy. However, instances of contercvailing power can be observed, such as in the U.S. case. The need for **GDP growth** is not questioned in any of the cases, but GDP growth are in some cases more important than others such as the Norwegian case. **Technological optimism** is prevailent in all cases and is not questiond or challenged. **Societal innovation** is only a point in the Dutch case. **Normes and values change** is not an issue in any case, at the best a bit in the dutch case. **Redistribution of wealth** is not an issue raised in the cases and national autonomy precails over international solidarity. This is also further underscored in the prevailance of **national industrial policies** as the main area of policy to foster sustainable development. Overll the tendency seems to be on Green Growth and Mission Economy, with little reflection on other options that are outlined in the Post-Growth and Great Mindshift paradigms. This also holds for EU policies.

	Norway	Finland	Türkiye	Netherlands	U.S.	EU
Policy goals	Facilitate for the development of a green, clean and sustainable global data centre industry	Make Finland a forerunner in clean energy development by fostering growth for a clean Finnish economy	Expand Türkiye's renewable energy sector and industrial policies to ensure energy sovereignty and a green transition	Energy Communities is an attempt to include the citizens of the Netherlands in the energy market making it more democratic and inclusive	Extraction of minerals from the seabed floor is a response to the increasingly demand of raw materials for making green technologies	To make the EU more sustainable and fostering a green (energy) transition while at the same time strengthening the Unions global competitiveness
Key scaling actor	The government is important for the facilitation and regulation of the data centre	The government is important for setting moonshot missions, but the market is seen as a	The government is fundamental for setting goals and priorities for the nation's renewable energy	The government plays a role in determining the conditions for activities of Energy	Both federal and state level are important actors but a conflict between levels of government	The EU plays an important role in setting the goals and direction of the sustainability policy within the Union and its

	industry but, the market is essential mechanism in the establishment of such an industry	the main tool for sustainable transition	policy and development	Communities but a bottom-up approach focusing on citizens and support organizations is strong	is evident because of different political and ideological views on the green transition	member states. The EU's internal market is important for ensuring a just and fair transition
Position towards GDP	GDP growth can be a positive outcome of the establishment of data centres	No explicit GDP growth position identified in this case	No explicit GDP growth position identified in this case	No explicit GDP growth position identified in this case	No explicit GDP growth position identified in this case	GDP growth is used in the Draghi report (2024) as a measure to illustrate how EU's slowing growth is leading to the Union to fall behind compared to the U.S. and China
Norms, values and behavioral change	No significant shifts from current norms and values	No significant shifts from current norms and values	No significant shifts from current norms and values	Mostly current norms and values	No significant shifts from current norms and values	No significant shifts from current norms and values
Technological innovation	Technological innovation, e.g. data centres, are fundamental for society's transition towards a greener future	The development of "clean" technologies, e.g. wind and solar power, are essential for Finland's ability to become a forerunner in the clean energy transition	Technological advancements in the renewable energy sector are seen as fundamental for Türkiye's ability to reach international climate commitment	Technological innovation is important in Energy Communities, but is seen as equally important as social innovation	The development of green technology is important in the green transition and extraction of raw materials are justified because of this	Technology and technological innovations are important aspects of the EU's strategy to become the first climate-neutral continent in the world
Redistribution of wealth	The Norwegian government wants to contribute to global sustainable, green data storage, while at the same time exploiting	The main goal is to ensure Finland's self-sufficiency and security of supply to stay competitive and ensure economic	Protection of national interests are primary goal of the renewable policy regulation which promotes a nationalistic economic model	Energy Communities suggest that citizens sould be an important part of the Dutch internal energy market but internationa	Self-sufficiency and independence of third-country supplies are important arguments for the need to extract raw	Solidarity is to be promoted within the EU and thereafter Europe, but this eurocentric solidarity is also based on the EU's wish of being

	the data driven economy for national economic growth	growth, while at the same time becoming a “clean” nation	promoting self-sufficiency and national industrial expansion	l energy solidary and distribution is not addressed	materials from the seabed floor	self-sufficient and to be competitive
Characterising policies	National governmental strategies direct set the boundaries and gives incentives to the market as an mechanism for the establishment of data centres	National governmental programmes direct set the boundaries and gives incentives to ensure clean growth and technological development	Nationalistic and protectionist policies are formulated by the government to foster development in the renewable energy sector and for the development of new industry	The government plays a role in determining the conditions for activities of Energy Communities in the energy market sector via energy laws.	Presidental orders formulate the political agenda at federal level, but state level policies can be made in order to oppose and resist federal policies	The EU sets moonshot missions for the Union and its member states through strategies from the Commission

Table 17 Comparing key features of the alternative paradigms with the case studies

6 Main insights for future policy-making

To conclude, a identification of six insights relevant for future policy-making and the MultiFutures project is done.The insights are derived from the cross-cutting analysis and represents the main opportunities for adjustments in the alignment of alternative economic paradigms, the EU's guiding principles and the specific country cases presented above.

(1) The government is important for setting the goals in sustainability policies
The government and state are important stakeholders in setting the political agenda and goals with regards to sustainability and environmental politics. Even when the market is seen as the main mechanism for achieving sustainability and distribution of energy, the government is crucial for ensuring regulations, implementations and economic support.

(2) There is a risk of conflicts between different levels of government
There is a potential risk for conflict between different levels of government when formulating and implementing environmental politics. Conflicting interest, political agendas, and strategic choices can create tensions that hinder the transition to a more sustainable society. The same applies to the relationshop between the EU and its member states, where diverging priorities between the Union and individual countries may further complicate the process.

(3) Navigating the tension between national self-sufficiency and international solidarity
A key conflict between the guiding principles of the EU, the country cases studies and the alternative economic paradigms is the tension between self-sufficiency and solidarity. This is particularly evident in the discussion and transition regarding renewable energy, where the countries producing such energy put national self-sufficiency and geopolitical interest first making energy solidarity a secondary concern. Against a backdrop of various climate changes and Russia's war against Ukraine, the European Union has underscored the importance of building a solidaric system for energy distribution within the EU and Europe. There is, however, a gap between the call for solidarity and the prioritizing of national interests, which can be an obstacle for finding a common path towards a new greener future. Building solidarity and moving away from market-driven growth are essential to ensure a fair green transition. A joint agreement on a common pathway for a greener future would be desirable to achieve this goal. To these ends the EUs influence in the region may be a powerful opportunity to include alternative economic paradigms.

(4) A critical approach to technology's role in the green transition is needed
A dominating approach to sustainability today is putting technology and the development of new green technologies at the heart of the green transition. The guiding principles of the EU clearly echoe techno-optimism arguing that technology and technological innovation are important factors to succeed in making a greener future for Europe. The question still remains how we can ensure that technological development does not come at the expense of nature and the environment. A paradox arises when untouched nature gets exploited and built over to extract raw materials for the building of climate friendly technology or, when healthy forests and land areas are put aside for the development of green, sustainable industries. The politics of the future should address such paradoxes in order to formulate policies that do not put nature and ecologies up against the work towards becoming sustainable where green technological developments are seen as worth building down nature for.

Given the centrality and acceptability of technological development to today's green transition, alternative economic paradigms offer an opportunity to redirect these efforts to ensure that they results in socially productive outcomes and avoids negative feedback on the environment and society. First, technological development should be directed towards the achieving social and environmental targets or emissions rather than to perpetuate growth. Second, the promises of technological development and digitisation should not be used as a means to justify exponential economic growth.

(5) There is a need for change in norms and values to enforce alternative(s) (to) growth
Much of the political, economic and societal discussions and decision-making today are today based on neoliberal thinking, where economic wealth and growth are important elements of how policies are formulated. If the future should represent new green pathways it seems evident that a changes in norms and values is necessary in order to reach such a future.

To make and implement policies based on alternative economic or alternative(s) (to) growth paradigms, a stronger enforcement of such paradigms are needed. The majority of alternative thinking today is found in political documents that have a weaker degree of enforcement and, therefore, alternative(s) (to) growth have little power behind their words. To ensure a policy-making that considers alternative economic paradigms seriously one should strive for enforcing political agendas and decisions where the goal is to make changes in norms and values.

While the case studies generally indicate that Europe is far from changing its norms and values regarding growth, the Netherlands case highlights the potential for progress if we can shift away from established top-down policy frameworks and industrial interests.

(6) The relationship between sustainability and growth remains unclair
A fundamental tension lies in the relationship between sustainability and growth. On the one hand, sustainability is argued to be a new growth strategy while on the other hand, it is pointed out that growth can never be a core idea in making our living sustainable. How should one unite the wish for growth while still being within planetary boundaries? One of many examples of this tension is the society's digital consumption which is the main driving force for the growth in and establishment of data centres. A prerequisite for this industry's future growth are our society's ever growing appetite for data-driven services, where green digitization and data storage is seens as a major part of the green transition. This example illustrates that sustainability is used as an justification to make societies and nations grow - economically, industrially and technically - by capitalizing on human consumption and building over nature to facilitate and expand this perceived "green" industry needed for a sustainable future. There seems to be a conceptual gap between sustainability and growth, but this is also a room for adjustments and reconfigurations.

6.1 Reflections for further work on finding new sustainable pathways

This Green Paper has analysed the relationship between five case studies of real-life policies from differen countries, the guding principles of the EU and four alterantive economic paradigms. The key question remains: Is there room to challenge today's dominant economic and political logics within existing politics? The answer is not straightforward. However, this Green Paper demonstrates a prevailing tendency for current politices to remain rooted in dominant ways of thinking about growth and sustainability, where economic considerations are maid priority over societal and environmental concerns.

If the goal is to place societies on truly sustainable pathways, fundamental shifts in the underlying locig of policy-making seems to be necessary. It is not enough to introduce sector-specific policy changes in areas such as industry, transportation or digitalization – though these are important. A deeper change in norms and values is required to enable the systemic change needed for societies to stay within planetay boundaries. The MultiFutures project should contribute to this transformation by exploring novel policy proposal that propose change in norms and values as a means of building sustainable, resilitent and fair societies in Europe and beyond.

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Summary	Using the framework of alterantive(s) (to) growth paradgims that was developed in Slingerland et al. (2024), this paper identifies underlying assumtioms on growth and sustainability in five case studies of present day policy making in different contries. Assessing also the roads not taken, it provides insights and advice to policy-makers for designing policies that are resilient to different visions of a new sustainable pathway for our societies. For this, we will conduct in-depth comparisons between alternative growth paradigms identified in Slingerland et al. (2024) and the current EU guiding norms and values, and assess the compatibility of alternative growth paradigms and EU principles.
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