

THE STRATEGIC ROLE OF RENEWABLE ENERGY IN THE EU
AFTER THE ENERGY CRISIS

AN EXPLORATORY CASE STUDY INVESTIGATING THE STRATEGIC AND
POLITICAL ROLE OF RENEWABLE ENERGY THROUGH THE ANALYSIS OF
OFFICIAL EU DOCUMENTS AND SEMI-STRUCTURED INTERVIEWS WITH THE
RENEWABLE ENERGY SECTOR



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Abstract

This thesis is an exploratory case study investigating the strategic and political role of renewable energy through analysis of official EU documents and semi-structured interviews with experts from the renewable energy sector. Through the problem formulation: *How has the role of renewable energy developed in the EU during and after the energy crisis in 2022?* the paper explores the evolving political and strategic importance of renewable energy in the European Union (EU), particularly following the energy crisis and the Russian invasion of Ukraine in 2022. The study investigates how renewable energy has shifted from being primarily a tool for decarbonization to a key factor in ensuring energy security, reducing dependency on foreign energy sources (especially Russian fossil fuels), and fostering economic and technological autonomy within the EU.

The thesis employs a qualitative case study approach, analysing EU official documents like the RePowerEU plan, the Net-Zero Industry Act, and the European Economic Security Strategy, as well as conducting semi-structured interviews with industry experts. It integrates theories from Global Political Economy (GPE) and International Political Economy (IPE), focusing on how market forces and political interests intersect and shape energy policies.

The key findings show that renewable energy has gained increased strategic importance due to its role in reducing energy dependency, enhancing the EU's competitive position, and contributing to political stability amidst global energy shifts. The EU's response, through initiatives like RePowerEU, the Net-Zero Industry Act, and the European Economic Security Strategy has prioritised diversifying energy supply sources, investing in strategic net-zero technologies, and upscaling the internal production of renewable energy.

The study concludes that the energy crisis has not only accelerated the green energy transition in the EU but has also solidified renewable energy's place as a cornerstone of the region's future economic and geopolitical strategy. This shift underscores the critical intersection of energy policy with broader security, economic, and political goals in the EU.



LIST OF ABBREVIATIONS AND ACRONYMS

EGD	European Green Deal
EU	European Union
FDI	Foreign Direct Investments
GPD	Green Power Denmark
GPE	Global Political Economy
IPE	International Political Economy
IR	International Relations
IRA	Inflation Reduction Act (USA)
MNC	Multinational Corporations
MS	Member State(s)
PE	Political Economy
SEM	Single European Market

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Chapter 1: Introduction

1.1 Introduction

At the end of 2021 the European Union (EU) was facing increasingly volatile energy prices marking the start of an energy crisis. Throughout 2021, the price of natural gas had increased substantially, with the price of electricity following in close pursuit. The energy markets in Europe are connected by a marginal pricing model, meaning energy prices mutually influence each other (Overvad, 2022d). At this point in time, Russia delivered around 40 pct of the natural gas for the EU after the corona crisis and didn't hit all EU member states (MS) equally. Some Eastern European states' gas supply came solely from Russian gas, whereas other MS didn't import any energy from Russia (Overvad, 2022c). Questions emerged about whether the crisis would hurt the green transition, as the energy crisis hit right when the EU was about to negotiate the details of the European Green Deals package and proposals for legislation, "Fitfor55"¹ (Overvad, 2022c) At the time, not all EU MS considered climate changes as one of the main challenges that the EU was facing. In this regard, there was some scepticism regarding sustainable energy's ability to secure stable energy prices and supply, with some MS in Eastern Europe already using a large portion of their income on energy. (Overvad, 2021).

1.1.1 Escalation of the crisis

What started as early signs of an energy crisis greatly evolved when Russia invaded Ukraine on the 22nd of February 2022. Russia delivered around 40 pct of the natural gas for the EU, and around a quarter of the EU's energy demand was met by natural gas. The price of gas was assessed to be the main reason for the high price of electricity, caused by poorly adjusted supply by Russia, and low European gas stores. However, other factors came into play; the increased price of CO2 quotas, high demand for energy during the economic recovery of Covid19, bad weather conditions causing a low production of electricity from water, wind, and solar power, and an increasing European dependency on natural gas over the last 30 years paired with the fact that around 83% of gas was imported from outside the EU at the start of 2020. This started

¹ "A set of proposals to revise and update EU legislation and to put in place new initiatives with the aim of ensuring that EU policies are into line with the climate goals agreed by the Council and the European Parliament." (Fit for 55, 2024).

a discussion about how the EU in the long run could become less dependent on Russian gas and be increasingly self-sufficient (Overvad, 2022c).

The energy crisis hit at a time with great vulnerability, with the EU already preparing to lessen interdependencies with Russia, but after the invasion of Ukraine, this agenda gained substantial importance and a declaration of independence from Russian energy was decided between EU heads of state and government at the Versailles Summit in March 2022 (Overvad, 2022a). Simultaneously, Russia began to use their energy resources as a political tool, and Gazprom² entirely or partially shut off gas to twelve EU MS during 2022 (Overvad, 2022b). Later in September 2022, Russia's largest pipeline, Nord Stream 1, supplying gas to the EU, was sabotaged, with no one claiming accountability ('Nord Stream 1: How Russia Is Cutting Gas Supplies to Europe', 2022). The EU started sanctioning some of the Russian energy sources, but Gazprom reduced the flow of gas themselves, driving the price of energy up further for the EU MS (Overvad, 2022a). Russia was the EU's biggest supplier of natural gas, but also supplied oil and coal, and thus accounted for almost 20 pct of EU's collected energy needs. Russia delivered around 40 pct of the natural gas for the EU, and around ¼ of the EU's energy demand was met by natural gas (Overvad, 2022e). In addition, it was determined that the EU would still need one third of their usual gas supplies from Russia, to get through the winter of 2022 (Overvad, 2022g).

The reactions of the EU MS to the energy crisis largely consisted of measures of tax reduction and economic support for the socially vulnerable. The measures were fast-acting and did not have an impact on the production of electricity, but they were also short-sighted (Overvad, 2022c). The European Commission then launched a plan to gain complete independence from Russian energy supply, known as 'RePowerEU' three months after the invasion of Ukraine. Two things are central for the plan to gain security of energy supply; (1) diversifying supply and transitioning to sustainable green energies like wind, solar power and hydrogen, and (2) using less energy overall and becoming more energy efficient (Overvad, 2022f). The EU was

² Gazprom is an energy cooperation with a monopoly on all exports of Russian pipeline gas. The cooperation is Russia's biggest company and the Russian state is the majority owner ('Explained: What Is Gazprom and What Makes It so Powerful?', 2022).

in a position where they had to look at new energy suppliers but needed to avoid new interdependencies with non-democratic countries with whom they didn't share values. The withdrawal from Russian energy, the need to secure affordable energy supplies, and the wish to be independent from rivaling states all strengthened the incentive to focus on enhancing sustainable green technologies within the EU (Friis, 2022). The war in Ukraine gathered the political support to detach from Russian energy sources, and energy security became equal to security in a more classical sense (Overvad, 2022b).

The energy crisis and the Russian invasion of Ukraine has clarified that the EU was too dependent on one supplier of energy. The EU managed to get through the winter of 2022 without a substantial lack of supply and the energy prices have dropped since, but they have not returned to pre-crisis levels, which has had a negative impact on European competitiveness and businesses. The EU now wants to collectively expand green energy in order to lower energy prices and regain competitive advantages. The MS have come to the agreement that 42,5 pct of the EU's energy needs must be covered by sustainable energy by 2030 – which is more than the double of what it was in 2021, the year the energy crisis started (Overvad, 2023b). Based on these developments, the following research question has been formulated as the basis of the investigation of this paper.

1.2 Problem formulation

How has the role of renewable energy developed in the EU during and after the energy crisis in 2022?

To answer this question, this research paper will use document analysis and semi-structured interviews, which will enable the examination of the role of energy in the EU through the lens of official documents, and the renewable energy sector. This paper will present the theory of Global Political Economy (GPE) and use concepts and indicators derived through operationalisation as guidelines for this research's analysis.

1.3 Delimitation

When using the concept of a 'role' in the research question, this paper must first clarify the definition of a 'role' as used in this paper. The analysis prescribes the following definition: *the*

function assumed, or part played by a person or thing in a particular situation’ (Merriam-Webster, n.d.). When analysing the case in this thesis through this definition, renewable energy constitutes the ‘person or thing’, the case of the energy crisis and subsequent war in Ukraine constitutes the ‘particular situation’, and the role of renewable energy is thus the ‘function assumed, or part played’. The ‘role’ indicates which objective renewable energy serves in the EU.

The function of the person or thing =	The person or thing =	The particular situation =
The objective that renewable energy serves for the EU	Renewable energy	Related context of each document

Table 1: The definition of a 'role' in the context of the case

This paper's document analysis operates within a time frame that spans from the start of the energy crisis to the publication and adoption of the last included official EU-document. However, when working with semi-structured interviews, the timeframe may alter a bit, as the respondents can speak freely as to their experience in the energy sector. This will be accommodated by asking questions related to specific points in time, or questions that wholly transcends the time frame.

This paper will interview experts from the renewable energy sector for the second part of this analysis. These experts are country specific, which is why this paper will consider the inherent national biases when analysing the interviews. A more comprehensive discussion will follow in section 4.3.1 about why these specific experts have been chosen.

This paper uses the concept of renewable energy and defines it as: *“energy from renewable sources’ or ‘renewable energy’ means energy from renewable non-fossil sources, namely wind, solar (solar thermal and solar photovoltaic) and geothermal energy, ambient energy, tide, wave and other ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas, and biogas.”* (The European Parliament & The Council of the European Union, 2018). At times the paper will also mention ‘green energy’, which is largely the same as renewable energy. Green energy comes from renewable energy sources and is green because it does not cause

pollution. Technically, renewable energy does not always produce green energy, but has the advantage of not being depleted (*What Is Green Energy? (Definition, Types and Examples)*, n.d.). This paper uses both concepts and refers overall to the production of green energy through renewable energy sources.

1.4 Literature review

The literature for this review has been chosen based on its ability to help understand the role of energy in the EU through existing research. In existing literature, we find that EU energy politics are thoroughly researched, and through the research it appears that energy and security has always been connected. First, in the market-sense where the EU regarded it their most important charge to secure a stable energy market for the consumers, and later in a more classic military-sense, where energy policies have become a product of high politics following several geopolitical developments, where security of supply and targeted regulation took centre stage (Andersen et al., 2017, pp. 4 & 21). Earlier, there may have been security aspects in energy policy, but now energy is a strategic interest at the heart of European security and foreign relations.

The literature shows two distinguished periods of research that explain the rationale behind the energy policies of the EU and the subsisting geopolitical context that has derived said policies. The first literature highlighted in this thesis is from around 2017 and sprung from the creation of the Energy Union strategy³ in 2015 and Russia's annexation of Crimea in 2014. Subsequently we see a second wave of research in 2024 occupied with the role of energy policies following the energy crisis and the escalating political tensions with Russia after the war in Ukraine.

1.4.1 Literature after the EU Energy Union strategy

The first notable collection of literature is *Energy Union, Europe's New Liberal Mercantilism?* A publication in the International Political Economy Series, which is edited by Svein S. Andersen, Andreas Goldthau and Nick Sitter. The authors highlight the European Commission's proposal for an EU Energy Union strategy as an important point of departure;

³ "The European Commission published a Strategy for a European Energy Union in February 2015. It focuses on energy security, completing the internal energy market, energy efficiency, decarbonisation, as well as research and innovation. The Energy Union Strategy sets out a holistic approach aiming to coordinate and integrate the energy policies of the EU and its Member States." (*Energy Union; New Impetus for Coordination and Integration of Energy Policies in the EU*, 2015).

“signalling a shift in the EU’s use of economic power in external relations” (Andersen et al., 2017, p. 1). The starting point of the book was based on an observation; that whilst the EU still subscribed to a liberal approach to international political economy, it seemed inclined to promote regulation to advance its own powers at the expense of others. This shift is labelled as *Liberal Mercantilism* (Andersen et al., 2017, p. V).

The Commission's proposal for an EU Energy Union consisted of five dimensions: “*security of supply, a fully integrated internal energy market, energy efficiency, emissions reductions and research and innovation*” (European Commission, 2015). The book argues that the first two dimensions directly affected the EU’s external energy policies. The first dimension, *security of supply*, would ease the dependency on Russia by diversifying gas imports. The second dimension, *integration of the energy market*, would affect external actors, as they would have to comply with EU-rules to interact and trade with the Single European Market (SEM) (Andersen et al., 2017, p. 2). These two underline the central question of the book, whether the EU conducted a new policy agenda within the realm of energy, involving a more direct use of the EU’s economic power toward external actors (states and firms).

The authors determine that the EU uses two different types of power. 1) Regulatory power - It is the EU’s long-standing approach and is a kind of conditional soft power, where competition policy and regulation are designed to alter market behaviour to achieve policy objectives. The EU affects the behaviour of others because of the attraction of its values, institutions or products. However, it has a hard ‘edge’ as foreign entities can only interact with the sizable European single market if they abide by EU’s rules and regulations (Andersen et al., 2017, pp. 2 & 18).

2) Economic power is the second kind of power, and it falls in line with the EU’s new policy agenda, exercising its economic power to deliberately change the behaviour of international actors, not just the market, in a targeted manner. This is described as a softer form of hard power. According to the authors, the EU was using economic power increasingly in regard to their foreign policy, and specifically within energy security in the 2015 Energy Union proposal (Andersen et al., 2017, pp. 2–4 & 23).

The authors describes the approach to energy policy as; “*looking at energy as a private good with a strong public goods characteristics*” (Andersen et al., 2017, p. 4). However, there is a consensus that private actors are unlikely to produce goods with public goods characteristics in large enough quantities to meet market demand. The EU’s role therefore becomes one of promoting the supply for the public good. Simultaneously, energy policy is a subject of high

politics for several member states, as the realm of energy is vital for their economy and national security. These member states have pushed for the EU to move energy into a role of high politics, giving energy a strategic role as well as one of public goods (Andersen et al., 2017, pp. 5 & 15). With the creation of the Energy Union, the EU aimed to streamline energy policymaking and deal with the perceived Russian threat towards member states by; “[...] *using economic power (e.g. pooling of gas purchases from third suppliers, targeted application of its regulatory power vis-a-vis pipelines and foreign energy companies, and also selective financial support for infrastructure provision) for political ends.*” (Andersen et al., 2017, p. 6). These proposals are presented by the authors as an example that shows that the EU is ready to promote regulation by use of economic hard power with the specific purpose to exercise influence over an external entity. However, the proposal was met with divergent opinions and there were a number of MS that believed that a well-functioning liberalised internal market with the use of regulatory power, was the best way to secure both high- and low political goals. The question remaining is whether the EU’s liberal approach would continue to hold up against Russia, whose trade approach is clearly mercantile? Especially considering that the regulatory power approach works best on firms, rather than governments, as firms are subject to the rules of the Single European Market (SEM), whereas governments are not (Andersen et al., 2017, pp. 7, 18 & 23).

Andersen et. al. highlights the two times the EU has applied economic power directed at minimising Russia's influence, before the proposals in the Energy Union. This is the support of the Nabucco project⁴ and an offer to the Caspian states for a temporary joint EU gas purchase project. These projects have failed in the sense that: “*Russia actively undermined the projects, drawing some EU states into alternative pipeline projects that would source gas from Russia and offering better deals to the Caspian states.*” (Andersen et al., 2017, p. 23). The EU’s economic power failed because of the member states' heterogeneous energy policies and relationships with Russia. Furthermore, the EU has limited policy tools for wielding hard economic power, which ultimately falls short of Russia’s “*mercantilist grand strategy*” (Andersen et al., 2017, pp. 20–23). The conclusion being that the EU might be better off sticking to its tried and tested regulatory power. Furthermore, the text questions whether hard

⁴ The Nabucco pipeline was a failed natural gas pipeline project from Erzurum, Turkey, to Baumgarten an der March, Austria. The pipeline was meant to diversify natural gas suppliers and delivery routes for Europe and in turn lessen European dependence on Russian energy and provide security of supply. (‘Don’t Cry for the Nabucco Pipeline’, 2014).

power in the form of economic power works for the EU. This is based on the fact that not all member states subscribe to the use of economic power and additionally because of the Commission's limited toolbox, even under the Energy Union (Andersen et al., 2017, p. 24).

In conclusion, the Commission's toolbox is limited, but within the parameters of the SEM's legislation, the EU can act in a unified and relatively effective way. At the time of the publication of the book, developments in the international energy markets (and Russia's annexation of Crimea) had brought to the forefront the asymmetries between the EU's (and its member states) and Russia's (and Gazprom's) objectives in the energy market (Andersen et al., 2017, p. 237). The Energy Union proposal acknowledged that the EU faced challenges that warranted new policy initiatives. Two forms of power were presented as ways to handle the situation; "*the external reach of regulatory power on one hand, and the explicit and selective use of economic power on the other*" (Andersen et al., 2017, p. 238). However, a new grey area between the neutral regulatory power and the politically motivated economic power might constitute a more encompassing third category. This is described as "*selective applications of regulatory tools directed at foreign actors that are identified as a source of a threat*" and in some cases the application of soft economic power as a result of asymmetric relationships and interdependence (Ibid). However, opinions have been divided where the Commission has tried to apply regulatory tools in the 'grey area'. On one hand, the states that defended the liberal regulatory model, found the thought of an openly mercantilist approach with politically motivated economic force as a foreign policy instrument unacceptable (Germany, Norway, UK and the Czech Republic). At the same time general concern about Russia's energy and foreign policy made some states push for a mercantilist strategy, providing the Commission with legitimacy for more active measures⁵ in the external policy (Andersen et al., 2017, pp. 239–240).

The classical definition of mercantilism is: "[...] *the political use of economic power — particularly trade — to augment a state's external power in the face of assertive rivals on the international stage.*" (Andersen et al., 2017, p. 240). This strongly follows the reasoning behind the Energy Union proposal. Russia was the external threat and therefore prompted measures

⁵ "*Measures include allegedly selective application of competition law and pipeline exemptions from third-party access rules, new legislation targeted at third-country firms (the 'Gazprom clause'), and financial support for strategic projects, such as the Nabucco pipeline.*" (Andersen et al., 2017, p. 240).

meant to employ EU's economic power to exploit Russia dependency on access to the SEM. Most of the mercantilist elements were centred around strengthening and revising energy policy already in place and using them for a foreign policy purpose. However, the strongest mercantilist proposals were diluted, and Andersen et al. argues that the final product fits into their description of the 'grey area'. Even though there are elements that clearly fit into the mercantilist definition, the final result remains a liberal form of mercantilism. In conclusion the authors coin the concept Liberal Mercantilism; liberal because it is market-centred with the use of regulatory power, but mercantilist in the way the Energy Union is promoting regulation to gain power at the expense of Russia. In summary using economic might to manage foreign relations and designed to deal with an asymmetrical relationship with a major energy supplier (Andersen et al., 2017, pp. 9 & 240-241).

1.4.2 Contemporary literature

In recent years, more and more research has been conducted regarding global power rivalries and the subsequent politicising of the global economic order. Not surprising, many policy areas are being affected, that were not earlier the centre of global, or even international, attention. One of the interesting articles that investigates this subject is Anna Herranz-Surralles' *The EU Energy Union Transition in a Geopoliticizing World*, 2024. The article introduces the concept of geopoliticization as the "missing link" between politicisation and securitization (Herranz-Surralles, 2024, p. 22). She assesses to what extent the energy transition is becoming geopoliticised in the EU, by applying a framework of defined patterns within policy-making and policy-instruments to define an otherwise ill-defined concept (Herranz-Surralles, 2024, pp. 1 & 22). The article references the authors of the previously mentioned text throughout, showing that this piece of research is part of an ongoing debate that can add context to the subject of this thesis (Herranz-Surralles, 2024, p. 1).

Herranz-Surralles' article is centred around climate neutrality and net-zero pledges which have highlighted European concerns about foreign energy investment and interdependencies in global value chains. These concerns need to be viewed in light of Russia's invasion of Ukraine in February 2022, which brought on Western action to terminate imports of hydrocarbons⁶ from Russia. This research brings attention to the geopolitical influences over the energy transition.

⁶ An organic chemical compound that is composed exclusively of hydrogen and carbon atoms. Hydrocarbons are naturally-occurring and form the basis of crude oil, natural gas, coal, and other important energy sources (Carey, 2014).

(Herranz-Surralles, 2024, p. 2).

Like the previous paper, this author recognises the EU as an actor historically pursuing liberal energy policies and depoliticising energy relations. But the EU is now dealing with external energy dependencies and tensions with Russia, who is the main natural gas supplier for the EU. Unlike the previous text, this piece of research is concerned with the transition into renewable energy and how this could prove to be a progress that entails a heightened focus on economic interests and protectionist policies, that now seem to be part of the new geopolitical order but are in conflict with the earlier liberal market policies (Herranz-Surralles, 2024, p. 3). Herranz-Surralles recognises the aspects of liberal mercantilism in energy policies that Andersen et al. mentioned and attributes them to a changing world with a higher degree of geopoliticization. Within this context, developments in trade, investments and the use of economic power are a product of geopoliticization and are defined as ‘gloeconomics’; “*the intersection of economics and finance with global political and security considerations*” (Herranz-Surralles, 2024, p. 4). The author describes geopoliticization and gloeconomics as two concepts with a close relation that becomes observable in practice when gloeconomic instruments are adopted to obtain power equalisation and a competitive upper hand between rivals. I would argue that said gloeconomic instruments are comparable to what Andersen et al. describes as the use of economic power to face assertive rivals (Andersen et al., 2017, p. 240). Thus, power rivalries become a driving force in policy-making (Herranz-Surralles, 2024, pp. 5–7).

Herranz-Surralles views gloeconomics, or the use of economic power, as interconnected with geopoliticization. She has constructed a table that showcases how this is manifested in policies and policy instruments. The claim is, that when analysing any subject, like the green energy transition through a geopoliticizing frame (see table 2 below), the subject in question will be viewed in terms of international hierarchies and global power rivalries. In regard to the energy transition, she writes; “*Any progress towards the energy transition has to be carefully assessed in terms of relative power positions rather than an absolute economic or environmental benefit.*” (Herranz-Surralles, 2024, p. 10). This statement should not be understood as a disregard for economic and environmental benefits, but rather that the underlying incentives are connected to power-political considerations, not necessarily firstly the concern for the SEM or environmental benefits (Herranz-Surralles, 2024, pp. 9–10).

Conversely, if the energy transition should be seen through a politicised frame without the ‘geo’ add-on, the domain should be defined as a domestic problematization with international aspects, meaning that states or international institutions, like the EU, would try to generate support for their preferred modus operandi to guide the energy transition through public diplomacy, outreach, and international cooperation. However, the very

Geopoliticizing frame	
<i>Problematization</i>	Domain with wider power-politics implications
<i>Policy-making</i>	Foreign-policy community, strategic units in government
<i>Policy instruments</i>	<ul style="list-style-type: none"> - Industrial policy and reduction of strategic dependencies - Protect the energy sector and clean tech industry from strategic competitors - Use of energy to project own economy or forge political alliances
<i>International cooperation outcomes</i>	Strategic partnerships, intergovernmental agreements

Table 2: Geopoliticizing frame

nature of the rivalry and competition of the international system, and the context of the war in Ukraine, gives energy transition a more securitized character, which makes the EU’s approach to the energy transition fall into the category that Herranz-Surrallés calls geopoliticised, invariably with the adoption of geoeconomic policy instruments (Herranz-Surrallés, 2024).

A concrete example of geoeconomic policy instruments could be the EU’s green industrial policy that encourages innovation and local production of green technology, or the increase of valid grounds to screen Foreign Direct Investments (FDI) in the European energy sector (Herranz-Surrallés, 2024, pp. 22–24). Herranz-Surrallés points out the self-reinforcing nature of using such geoeconomic instruments, that Andersen et al. calls economic power; “Although EU officials and documents routinely insist that geoeconomic instruments are not the preferred option and that the proposed protective measures are a defence against those countries not playing by the rules, the overall unintended consequence is contributing to wider geopoliticization dynamics.” (Herranz-Surrallés, 2024, pp. 23-24). By continuing these initiatives, the geopoliticization intensifies and heightens global competition and diminishes trust in multilateral institutions (Ibid).

1.4.3 Discussion of the literature's inferences

The conclusion from the literature review is that there is an overall approach in the EU to protect its own economy at the expense of rivalling countries. The energy sector is particularly

intertwined in these tendencies, as the use of economic power has materialised throughout energy policies. Call it mercantilism, economic power or geoeconomics, it all comes down to a somewhat more protectionist approach, going beyond regulation of the SEM and bleeding into foreign policy territory.

In the texts we see an added dimension to the subject of energy. To start with, the Energy Union was concerned with “*security of supply, a fully integrated internal energy market, energy efficiency, emissions reductions and research and innovation.*” (European Commission, 2015). In the newest research there is a heightened focus on the transition to clean energy. In both of the time periods where the literature was produced, there is a growing or impending threat to the security of energy supply due to conflict and geopolitical unrest, thus making energy policies a platform to exercise responses. And, while the renewable energy transition is important for the environmental benefits, it is also very important as an avenue for the EU to have less dependence on Russia and presumably be more successful when using sanctions and other economic power instruments.

Both texts reflect the problematization of energy politics in their contemporary times, and the similarities of their conclusions regarding economic tools paint an interesting picture of the way global unrest and the use of economic power is evolving. One of the points briefly touched upon by all, is the role of the industries and firms in the energy sector. Anderson et al. mentions several times that the regulatory approach to address geopolitical challenges can be successful, but by definition, it works best in a market context. Regulatory power; “[...] *hits firms more than government because companies are subject to SEM rules, are physically present on the EU market and can be fined. Unless firms are targeted as proxies of governments, the EU’s regulatory power therefore works less well with governments.*” (Andersen et al., 2017, p. 18). This is a very interesting observation, making it that much more interesting to understand the impact on specific industrial sectors with increasing use of economic tools in policy-making. None of the pieces of literature describes how the energy sector receives the increasingly economic policy tool. Further, Herranz-Surrallés notes that there is a lack of research into how actors like the EU approach the energy transition in specific sectors (Herranz-Surrallés, 2024).

Chapter 2: Theory

In this section I will present the theory of International Political Economy (IPE) and Global Political Economy (GPE) with the intention of understanding how the theory explains the use

of market policy instruments by a regional economic institution (the European Union) to reach political goals. Moreover, this section will explore the role of technological and industrial development as a driver of economic policies.

2.1 Political Economy

The theory GPE is based on the preconceptualised and older theory of IPE. The similarity of both IPE and GPE is the interdisciplinary concept of Political Economy (PE). Robert Gilpin writes in his 1987 publication, *The Political Economy of International Relations*, that: “*The parallel existence and mutual interaction of “state” and “market” in the modern world create “political economy”; without both state and market there could be no political economy.*” (Gilpin, 1987, p. 8). By this definition the *state* represents politics and the *market* represents economics. For both theories Robert Gilpin writes that the way one should understand ‘economy’ is as markets embedded in a social political system (Gilpin, 2001, p. 45).

“[...] a sociopolitical system composed of powerful economic actors or institutions such as giant firms, powerful labour unions, and large agribusinesses that are competing with one another to formulate government policies on taxes, tariffs, and other matters in ways that advance their own interests.” (Gilpin, 2001, p. 38).

In this definition, the ‘economy’ is not necessarily a market composed of economic forces. It is an identifiable social and political structure with actors that impact the functioning of markets. Institutions, like the EU, constitute an interesting case as it is both an economic and political actor (Gilpin, 2001, pp. 38–39) In this context however I would argue that the EU falls into the category of political actor, as labour unions, businesses and firms are lobbying the EU to formulate economic policies that accommodate them. Further, I argue later that the EU is a platform for the member states to exercise their national interests, meaning that through the lens of international- and global political economy, the EU should be viewed as an extension of the state.

2.2 International Political Economy

Since Gilpin wrote about IPE in 1987, a lot of fundamental changes have occurred within the field of political economy. This includes the end of the cold war, the rise of democratic capitalism and the neoliberal market-oriented economy, and many technological advances - all contributing to economic globalisation and an increased interdependence of the world's national economies (Gilpin, 2001, p. xi). Further, the world has experienced economic growth

regionally, leading to the formation of regional economic arrangements, like the European Union. All the above-mentioned factors of political and economic change have been drivers of innovations in political economic theories that have somewhat altered the original understanding of IPE and set the stage for Gilpin's 2001 book, *Global Political Economy, Understanding the International Economic Order* (Ibid, p. xi-xii). However, it should be emphasised that IPE does not lose its relevance with the conceptualisation of GPE. IPE is largely referred to synonymously with GPE and should be viewed as the basis of the theory used in general terminology, whereas GPE is an addition.

The theory of IPE has often been defined as a form of interplay between the state and market: “[...] a branch of political inquiry that studies the intersection of international relations and political economy. Rather than privileging states over markets, as traditional IR has tended to, IPE examines both states and markets.” (Dunne et al., 2013, p. 354). This definition holds the view that IPE is interdisciplinary and balanced between the fields of economics and international relations. However, Gilpin states that he holds a state-centric approach, and his thoughts on IPE are that “markets [...] constitute a means to achieve and exercise power, and the state can be and is used to obtain wealth.” (Gilpin, 1987, p. 11). In his view the market does influence political outcomes, but the market and state cannot be separated. The economy is also more dependent on political decisions than economists would like to admit (Gilpin, 2001, p. 25).

Central to the study of IPE is the intersection of the market (drawn to the most efficient and profitable economic activities) and the state (driven to control economic growth in order to increase power and economic welfare). The international economy is believed to create interdependence and common interests between states, but the interdependence along with states’ desires for political autonomy often causes tensions. Moreover, the interdependence is rarely symmetrical, and this asymmetry can be, and often is, exploited, resulting in vulnerabilities. This clash between the market and state is a dominant theme in IPE, underlining the fact that international economic relations cause political exploitation, either incentivising actions towards the creation of trade protection policies and industrial policies, or the increase of dependence via foreign aid and trade concessions. The chosen actions depend on whatever best represents the states’ interests at the given time (Gilpin, 2001, pp. 80–82).

2.3 Global Political Economy

The newer conceptualisation of GPE is motivated by important changes in the world economy up through the late 20th century, including economic globalisation which entails developments in international trade, finance, and foreign direct investments (FDI) by multinational corporations (MNC) - all factors causing competition to increase. One of the reasons for the increased economic globalisation is the increased international economic cooperation resulting in lower trade- and investment barriers. These developments made the global economy more market-oriented, and some scholars believe that the market has become the most important mechanism in the global economy, even causing the decline of the power of the nation-state (Gilpin, 2001, pp. 5–9). However, Gilpin argues that economic developments aren't just determined by the market, but by the priorities of the political systems where economic policies are embedded. Political factors therefore have a great impact on markets and economic developments, and factors like security, political interests and national pursuits are drivers of the global economy (Gilpin, 2001, pp. 11–12). These political factors are largely owed to states' interests in safeguarding their own power, even steering market forces to increase their influence over rival states (Gilpin, 2001, p. 77).

Within the theory of GPE, the nation-state remains the dominant actor in both domestic and international contexts (Gilpin, 2001, p. 4). Gilpin argues that most national economies are self-contained and the economic globalisation is still largely restricted to industrialised countries like the United States, Western Europe, Japan and the emerging East Asian markets. Even though countries like China have gained significant economic importance, the older industrialised economies still hold a large share of global wealth (Gilpin, 2001, pp. 9–11).

The newer concept of Global Political Economy (GPE) is defined as: “[...] *the interaction of the market and such powerful actors as states, multinational firms, and international organizations, a more comprehensive definition than in my 1987 book, The political Economy of International Relations, although both take a state-centric approach to the subject.*” (Gilpin, 2001, p. 18).

As mentioned, the world economy has become more globalised, and the original conceptualisation of IPE did not encompass the formation of transnational organisations, institutions and firms. Understanding that the concept was outdated, this newer definition takes these developments into account. However, it is clear that Gilpin does not think that states lose

their relevance in a more globalised world. With the emphasis on states, it is not surprising that this definition of GPE is conceptualised through the analytical perspective of *state-centric realism* (Gilpin, 2001, p. 14).

Analysing events that fit the definition of GPE through the lens of state-centric realism means recognising state, security and power as central components in the nature of international affairs, and the state as the highest authority. The central concern thus being national interests in security, political independence and attention to shifts in the political balance of power. Even so, we still need to recognise multinational firms, international institutions and nongovernmental organisations as important non-state actors - e.g. the European Union. This raises a question of how states, according to realism, are still the central actors in international affairs when more relevant actors have emerged? Gilpin states that national governments make decisions on economic matters that provide the framework for other non-state actors to function within. States therefore have a great influence over economic outcomes. Using the EU as an example; it is a highly integrated international institution, but the major political players within it are states. This follows the reasoning that states, as political players, are ultimately setting the agenda for the direction of the EU's economic policies (Gilpin, 2001, pp. 14–19). Given this, the EU becomes an example of “*collective national efforts*” to reach goals of economic autonomy and security (Gilpin, 2001, p. 21). In this interpretation states aren't just thinking of economic independence, but also their relative gains⁷ from economic exchanges. This follows the idea of a zero-sum game⁸ and manifests in terms of trade and return of foreign investments. Even though there is evidence supporting the idea of economic positive-sum gains⁹, states tend to weigh heavily on relative gains when it comes to military power and the distribution of industrial power in high-tech industries (Gilpin, 2001, p. 78-80). Both are subjects that hold great importance in the Net-Zero Industry Act and the Joint Communication on the European Economic Security strategy, which will be presented in the analysis, sections 4.2.2 & 4.2.3.

Some scholars reject the state-centric perspective of Gilpin's understanding of IPE and GPE. There is a popular belief that economic and technological forces have taken off, overriding the boundaries set by states, making states inferior to global market forces. It can be said that economic and technological leadership is highly coveted and is thus shaping the behaviour of states. On the other hand, the strategic importance of certain technologies is inciting states to

⁷ The size of one's gains, relative to gains of other actors (Gilpin, 2001, p. 78).

⁸ A situation in which a gain for one side entails a corresponding loss for the other side (*Merriam-Webster*, n.d.)

⁹ Situations in which the total of gains and losses is greater than zero (*Britannica*, n.d.).

implement policies to secure their advantage of these strategic areas, in turn enforcing their position in the international system. This book strongly alludes to the fact that growth, and the economic power pertaining thereto, follows technological leadership. Countries with technological leadership tend to become powerful nations capable of reshaping world affairs to their own economic and political interests (Gilpin, 2001, p. 136) There is truth in the fact that technological, economic, and political developments outside the state have an impact on national interests and foreign policies, but Gilpin rejects the statement that states have lost their power as autonomous actors, especially when explaining the formulation and execution of economic policies. (Gilpin, 2001, pp. 21–25 & 36-38). However, the incentive to execute said economic policies can be partly attributed to the economic competitiveness following the importance of technological leadership (Gilpin, 2001, p. 141). This discussion becomes increasingly interesting when trying to understand the importance of renewable energy as an increasingly strategically important technology. This will be elaborated upon in the analysis (Cap. 4).

2.4 Economic regionalism

One important contribution to the theory of GPE, and an important addition for the analysis in this thesis, is the introduction of the concept of *economic regionalism* (Gilpin, 2001, p. 4). The concept can be defined as such:

“[...] *cooperative efforts of individual states to promote both their national and their collective economic and political objectives. Economic regionalism is an important response by nation-states to shared political problems and to a highly interdependent, competitive global economy.*” (Gilpin, 2001, p. 21).

Amongst other things, economic regionalism entails the increase of production and economic activities in a coordinated manner, but also political unification. This increase in coordination amongst national economies is expedited with the intention of strengthening autonomy, enhancing bargaining positions, and promoting mutual political and economic objectives. The EU and the creation of the SEM in 1986 marks the start of this type of regionalism. There are different distinctions for what the primary motivation is behind the creation of economic regionalism, but for the EU in its earliest form, it was largely motivated by the political objective of putting an end to the rivalry between Germany and France, thus making it a political and economic entity (Gilpin, 2001, pp. 341–344).

An important take-away from this concept is the fact that regionalism is not an alternative to the nation-state. These arrangements should be regarded as a collective promotion of national interests and ambitions of the individual states (Gilpin, 2001, p. 11). In a theory where the nation-state holds such a dominant status, it becomes important to understand how an entity like the EU fits into the theory's framework. Understanding that the EU is acting on behalf of the nation-states makes the theory applicable, as the EU can be understood as acting on behalf of - and therefore constitutes the role of - "the state".

2.5 Choice of theory

This paper includes the concept of GPE because it considers new global developments, but mostly because it explains the role of the EU. It is the newest version of PE where the focus still lies in between the market and the state but makes room for non-state actors. Even though the title of GPE refers to global elements, the case in this thesis is mostly concerned with the regional elements of the EU. In addition, the 'market' and economic factors constitute a large portion of the theory, which is highly relevant when analysing a case that concerns an economic crisis.

2.6 Operationalisation

Following the theoretical description this section aims to operationalise relevant concepts for use in the thesis' investigation and analysis. The reason behind an operationalisation section is to discuss which indicators can be used as a measure in the analysis when applying the theory. The term operationalisation originally referred to a sort of quantitative measurement (Bryman, 2012, p. 161). In the case of qualitative research, operationalisation is used to bridge the gap between the definition of an abstract concept in the theory and the concrete evidence available for analysis. The operationalisation helps to gain a common understanding of the concepts and their use and strengthen the reliability of the paper. Measurement in this case should be understood, not as a quantitative direct measure of numerals, but rather as a way to understand and examine the concepts from the chosen theory when analysing the evidence (Pennings, 2016, pp. 57–62).

2.6.1 Theoretical indicators

In the case of International Political Economy (IPE) and Global Political Economy (GPE) the main concepts that continuously show up throughout are 'state' and 'market', each of which represent politics on the one hand and economic influences on the other.

First, it has been determined that the term ‘market’ within the realm of political economy is defined by the individual industrial sectors and their stakeholders, like labour unions and large businesses, that have an interest in influencing government policies regarding the market (Gilpin, 2001, p. 38). Secondly, the term ‘state’ refers quite narrowly to states. Because of the point of departure in state-centric realism the theory holds that states are the primary actors and therefore hold a great influence over the economy - meaning influence over the market actors. Through the lens of GPE, the EU’s role is one of collaboration between states that have similar political and economic objectives, known as economic regionalism. But, for the sake of applying the theory to this case, the EU represents the ‘state’, as an intersection of national interests (Gilpin, 2001, p. 11).

Both concepts are quite broad and represent different actors depending on the individual case in question. In this thesis the Danish energy sector represents the market, and the EU represents the role of the state. The theory largely describes the motivations of states to control and shape the market to their advantage. The concepts of ‘state’ and ‘market’ can be analysed by searching for the related indicators that are derived from the theory. The theory-derived indicators that explain the state's motivation for political action are; *political interests in security* (understood quite broadly), *economic autonomy*, *power optimisation*, and *technological leadership* (Gilpin, 2001, pp. 11–12, 14-19, 77 & 136). Similarly, for the economic actors that constitute the market, the indicators that decide their motivations are a *strong competitive position* and *favourable economic policies* on e.g. taxes and tariffs (Gilpin, 2001, p. 38).

Concept	Indicators [to measure and analyse the concept]
State [and its interests]	Security
	Economic autonomy
	Power optimisation
	Technological leadership
Concept	Indicators [to measure the concept]
Market [and its interest]	Favourable economic policies
	A strong competitive position

Table 3: Theory-derived concepts and related indicators

The analysis will search for detailed empirical evidence of the indicators. By analysing the indicators determined through the theory it will be possible to discuss the relationship of influence between the state and market and thus deduce a conclusion to answer the thesis' problem formulation (Pennings, 2016, p. 58).

2.6.2 Limitations of the theory

The chosen theory of GPE is conceptualised on the basis of state-centric realism, which creates limitations for the operationalisation and analysis. For example, the approach does not give much credit to public opinion or the EU as an autonomous actor. For the sake of the thesis' analysis, the EU is regarded as an actor juxtapositioned to a state. The theory recognises states as the primary actors in political economy, and the EU as an example of economic regionalism that benefits the member state's interests. This thesis will not go into detail of the main concerns of every member state. Instead, the analysis will proceed to refer to the EU as one unit. Regarding these considerations, the theory's applicability will be addressed in the discussion, in section 5.1.

Another limitation is the fact that, even though IPE and GPE are based on the interdisciplinary concept of PE; "*The parallel existence and mutual interaction of "state" and "market"*" (Gilpin, 1987), Gilpin is a bit unilateral in the way, that there is not much focus on the perspectives of the socioeconomic market. This makes the 'interaction' between state and market less prominent, and the motives of the state more important, resulting in more indicators under the concept of 'state'.

Chapter 3: Methodological considerations

This section will provide a presentation of the methods of research used for this thesis. Below are the considerations made in terms of the chosen methodology, including the qualitative method and its usage for this project, a presentation of the research design, and the research approach. This entails the methods of collecting and assessing the empirical data, e.g. the selection of documents and use of interviews, followed by a presentation of the choice of document analysis and coding of interviews to examine the empirical material. The quality criteria of research will be discussed continuously throughout the methods section.

3.1 Qualitative methods

The research goals and nature of the problem formulation suggests that the most logical form of investigation is through a qualitative research design, as the focus of this study is to develop an understanding of the role of green energy through the EU's perspective. In this particular case, the intention is to gain an in-depth understanding of the topic through document analysis and interview. The thesis' aim is to explore the role of green energy after the energy crisis in order to understand the political actions of the EU. Interpreting dense text-based data can provide an understanding of the EU's perception of energy outside the use of numbers and statistics. Qualitative methods will therefore assist in producing a detailed analysis relevant to answering the research question (Ercan & Marsh, 2016, pp. 309–320) (Toshkov, 2016, pp. 7–8).

3.2 Research design

The research design of a paper refers to the structure and study approach that guides the method and analysis. This analysis uses the case study design, which can offer an adequate framework for gathering knowledge about the world of politics (Seha & Müller-Rommel, 2016, pp. 419 & 427) (Bryman, 2012, p. 45).

3.2.1 Single case study

The single case study is defined by Alan Bryman (2012) as “the detailed and intensive analysis of a single case” (s. 66), however the term ‘case’ can be more difficult to define. According to Bryman, a case is associated with a location, time, community, organisation, and so on, but other scholars have produced somewhat more complex definitions. This author subscribes to John Gerring's definition: “*a spatially delimited phenomenon (a unit) observed at a single point in time or over some period of time*” (Gerring, 2013, p. 1137).

Bryman (2012) states that the use of case study design can be used for both qualitative and quantitative research, whereas Gerring (2013) and Esther Seha & Ferdinand Müller-Rommel (2016) state that “*case studies are intrinsically tied to qualitative methods*” (s. 419). Either way, case studies are often used with qualitative methods and make for an ideal approach for this paper. A place where all authors agree is that case study designs aren't always the best for drawing causal inferences that have validity across time and space based on a few cases, however it remains up for debate whether the objective is to reach generalisations or rather to uncover the distinctiveness of a singular case (Seha & Müller-Rommel, 2016, pp. 419–421).

The latter objective is the kind used in this thesis and lends itself to a more interpretative approach (social science is subjective depending on perspective of reality), rather than a positivist approach (belief that social science can be objective). This also means that the validity of the findings can be harder to determine. The distinct advantage of a case study is: “[...] *its ability to deal with complexity and provide in-depth and holistic, context-sensitive knowledge about cases. Case studies offer extensive insight into the empirical relationship between variables in individual cases and are an appropriate means for uncovering multiple pathways to the same outcome [...]*” (Seha & Müller-Rommel, 2016, p. 421).

The unit of analysis regarding the case in this thesis is EU’s renewable and green energy politics. The location regionally is Europe, the community and/or organisation is the EU. The timeframe of the case in question is from the start of the energy crisis in late 2021 to the publication and adoption of the latest EU-document in the document analysis. This thesis’ research strategy can be classified as a single case study with a small-N research design, meaning that it is concerned with one (or few) cases and several variables (Seha & Müller-Rommel, 2016, p. 420).

3.2.2 Quality criteria

The quality criteria in social research are there to evaluate the *reliability* and *validity* of any given paper. Where reliability is concerned with “*the question of whether the results of a study are repeatable*”, the validity refers to “*the integrity of the conclusions that are generated from a piece of research*” (Bryman, 2012, pp. 46–47).

The paper already covered that the operationalisation section helps to gain a common understanding of the concepts and their use and strengthen the reliability of the paper. Further, to increase reliability the paper uses data with public access and has attached the transcription of the interviews. The use of qualitative case study design could make it more difficult to draw causal conclusions that have a high degree of validity. But the triangulation of analytical methods and data will increase the overall validity.

3.3 Research approach

In this thesis the research question posed is of a positive nature, meaning that it deals with “what is”. The focus lies on describing and understanding reality as it is, based on empirical phenomena. This type of positive research should not be confused with logical positivism, which is a philosophy of science concerned with testing deductive hypotheses (Toshkov, 2016,

p. 24). The research is positive rather than normative, as the thesis does not try to deal with values and norms about what “ought to be”. However, the thesis tries to be free from bias and strive for an objective standpoint (Toshkov, 2016, pp. 24–28).

The mode of research is empirically informed, as mentioned, the research investigates real-life phenomena and is derived from empirical observations. If the research was based on theory or hypotheses, it could have been a theoretical piece of research. However, even though this is presented as a piece of empirical research, theory still plays a role. This author utilises theory as a framework for analysing the empirical data, with the intention of answering the research question. But the analysis is concerned with the case that goes beyond theoretical abstractions (Toshkov, 2016, pp. 29–30).

The specific type of empirical research can be determined to be descriptive, adjoining to exploratory - understood as an advanced form of description. (See figure below to visualise the divisions of research). The research in this paper is descriptive because the thesis analyses and describes empirical facts relevant for interpreting the case and answering the research question. Evidence that is found in the data and used in the analysis is also informed and steered by theory, thus underlining that theory is still applicable in an empirically formed study. The descriptive research makes its inferences based on detailed evidence found in data in documents and transcripts. One of the rationales for using both primary and secondary data is to gain said detailed evidence (see below). In addition, the research can be described as exploratory, as the analysis considers possible explanations to the conclusions in a more freely discursive way, than if the research was purely explanatory (Toshkov, 2016, pp. 31–33). This thesis considers the reasons for the current role of renewable energy, but it does not try to present a definitive causal mechanism that can explain the developments. Further, the subject is complex and intertwined with many diverse factors, and therefore a single causal explanation would be too confining to understand the scope of the events (Toshkov, 2016, pp. 35–37). Another reason for producing exploratory research is the fact that the area of study is on the newer side. There may be similar studies that touch upon some of the themes of the thesis, but this specific case has unfolded within recent times, and there is room to explore the topic further and gain a more comprehensive understanding (George, 2021).

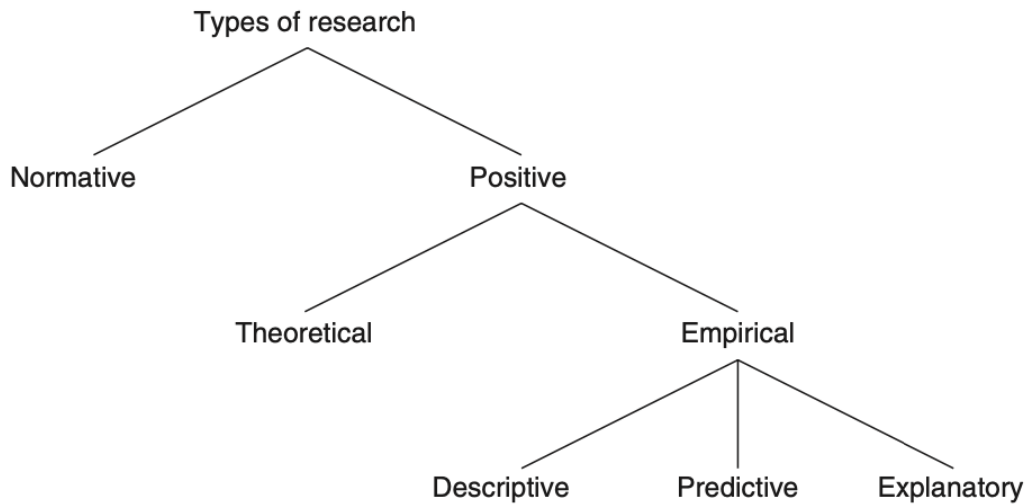


Figure 1: Visualisation of the different research approaches (Toshkov, 2016, p. 30)

The methods of analysis used in this thesis to answer the problem formulation are document analysis and semi-structured interviews. In order to conduct these forms of analysis I have gathered relevant data on the subject through sources of primary data and secondary data. The primary data is collected expressly for this research purpose and targeted toward answering the problem formulation in question, whereas the secondary data exists independently of this thesis. Secondary data can be any sort of communication in the form of documents, speeches, press releases, think tanks, newspapers, transcripts, etc (Ercan & Marsh, 2016, p. 316) (O’Leary, 2017, pp. 224 & 266-272).

The document analysis in this thesis has been conducted on the basis of secondary data produced by the EU. The use of this kind of data ensures that the documents are not affected by any bias by this author and is widely accessible. However, to be included in the thesis, this data needed to be from a credible source and relevant to the research question, since secondary data is produced for alternative purposes. The credibility has been ensured by only using documents for the analysis produced by the EU that are available through official EU webpages. As for the literature review, the selected research was sought out through Aalborg university library’s search engine and on platforms where access was gained through an Aalborg university login. This ensures that the academic writings come from university-approved platforms. Further, all the collected data was sought out through search of wordings related to the research question. This also applies to any sources of information that help form the scope, context and background for the analysis. It has been taken into consideration continuously throughout, if analytical and contextual data-sources are credible, recognised, objective, verifiable, and what their intentions are (O’Leary, 2017, pp. 266–278).

The semi-structured interviews in this thesis have produced primary data for the purpose of this paper and the related research question with the intention of gaining insights that are not otherwise available. The interviews are semi-structured, as there was a clear idea of what questions needed answering, but still allowing for flexibility in the order of questions and answers (Ercan & Marsh, 2016, p. 314). Some of the uncertainties that come with the use of interviews to produce primary data is the subjectiveness of the respondent, unclear formulations of questions, and consequently misinterpretations when questions are received. The possible negative variables have been eliminated to the greatest extent by considering who are good candidates to interview, developing the interview with thorough consideration for O’Leary’s (2017) 7 points of construction of the interview guide, and conducting the interviews with all the necessary precautions to conduct a well prepared and well balanced interview (O’Leary, 2017, pp. 224 & 239-249).

The use of both primary data and secondary data can provide a more holistic and nuanced understanding of the research area, which lies in the cross-section of complicated international dynamics. The different methods of analysis of the data provides a sort of methodological and data-based triangulation that can help gain a complete picture and enhance the validity of the findings (George, 2021).

The collected data has subsequently been treated through the method of qualitative content analysis, meaning that the data is analysed in relation to the posed research question. This form of analysis is interpretivist in nature, as it analyses qualitatively generated data (Ercan & Marsh, 2016, p. 316). Content analysis typically follows a deductive research approach, which this thesis applies (Lynggaard, 2020, p. 194). The analysis interprets meaning and thematic trends in the documents via indicators that have been derived earlier through the operationalisation in order to make inferences. The indicators and thematics thus guide the coding of the transcripts of the interviews (O’Leary, 2017, pp. 339–342).

Finally, the objective of theory in the thesis is to use deductive theory application to support the prospective explanations and explorations in this single case study. As mentioned, the analysis is empirically founded, rather than founded in theory, but empirical research is still connected to theory. Theory application means to apply an existing theory as a means to interpret the case and elucidate factors and mechanisms that allude to the explanation of the role of renewable energy in the EU. Most importantly, with the use of deductive theory application, the thesis does not endeavour to contribute to the theory itself or make

generalisable inferences (Bryman, 2012, pp. 24-27). The choice of using the theory of IPE and GPE has been elaborated in section 2.5. I will, however, point out that there are several theories that can be applied and offer some explanation to the case and empirical data. The choice ultimately falls upon the theory that I deemed had the highest degree of explanatory power (Toshkov, 2016, pp. 37-42).

3.3.1 Document analysis

This paper uses documents as the empirical foundation for the first part of the analysis, thus making document analysis one of the thesis's analytical methods. Document analysis is a frequently used method in social sciences, partly because it can be used in a broad range of investigative areas and it is quite compatible with the chosen research design of case study (Seha & Müller-Rommel, 2016, pp. 426-427). One of the things document analyses are good for is investigating meaning and developments within political and social phenomena. Further the chosen documents can highlight a specific time-period. This paper utilises documents to showcase the role of renewable energy as a political phenomenon that has shown developments in a limited time-period from the onset of the energy crisis and up until the current date of the thesis' hand-in (Lynggaard, 2020, pp. 185–194).

A brief definition of what constitutes a document has already been presented in the Research Approach (3.3) and the criteria for the document selection will follow directly after. The documents in this paper are official documents produced by the EU and are subject to analysis through the indicators derived from the operationalisation and context relevant to the research question (Lynggaard, 2020, pp. 194–195).

This paper follows O'Leary's (2017) eight steps for gathering, reviewing and interrogating the documents. The process starts with (1) *gathering* the relevant corpus of texts through EU's official webpages, like eur-lex.europa.eu and commission.europa.eu. (2) The documents have then been *organised* by their author, type, and content. (3) *Copies* should be made if the document is difficult to access (4) *Authenticity* has been confirmed quickly as the documents have only come from official EU web pages, (6) as for *background information* about the authors, the same applies. (5) The inherent *biases* of the texts are an important part of the analysis, and a central part in analysing the agenda of the text. This connects with the seventh step (7) *asking questions about the text*; the intention of the text and in what context it was produced, as well as (8) *exploring the actual content* of the text (O'Leary, 2017, pp. 272-279).

3.3.2 Document selection

All documents subject to analysis in this paper are official documents produced in and by the EU institutions. The way the documents have been selected is by following references to other texts within the documents themselves. This helps uncover all the relevant texts within a field of research and reach a point of saturation on the subject. This is also described by Kennet Lynggaard (2020) as the “snowball effect” (pp. 189-194).

The methodological considerations that precede the document analysis are based on *authenticity*, *credibility*, *representativeness*, and *meaning* - somewhat following the same considerations presented in O’Leary’s (2017) document analysis. The ‘*authenticity*’ is quite simple, as the origin is relatively easy to uncover. The ‘*credibility*’ regards potential biases, which are inherent, but also interesting, as they are a point of analysis in themselves. ‘*Representativeness*’ describes the way in which the chosen documents provide a complete depletion of information about the subject. This is always an uncertainty and is the precise reason the paper includes the method of interview to gain a more complete understanding of the case. The last methodological consideration ‘*meaning*’ refers to whether the expressed points in the texts appear clear, or if there is cause to believe that the content can be misinterpreted. It is difficult to give an answer to the clarity of meaning, as official documents can be deliberately clear or unclear depending on the sensitivity of a subject. All considerations will be assessed continuously throughout the analysis (Lynggaard, 2020, pp. 196-202).

Title	Author	Type	Content	Date of publication
RePowerEU Plan	The European Commission	Communication	The plan aims to save energy, diversify energy supplies and help produce clean energy, and simultaneously phase out Russian fossil fuel imports. ¹⁰	18.05.2022
Net-Zero Industry Act	The European Commission	Proposal for a Regulation	The act aims to scale up clean	16.03.2023

¹⁰ (*RePowerEU at a Glance*, European Commission)

			technologies in the EU, thus supporting the clean energy transition and reducing greenhouse gas emissions. ¹¹	
European Economic Security Strategy	The European Commission and the High Representation of the Union for Foreign Affairs and Security Policy	Joint Communication	The strategy sets out a framework for achieving economic security by promoting competitive abilities, protection against risks, and partnering with countries with shared interests. ¹²	20.06.2023

Table 4: EU-documents analysed in the paper

3.3.3 Semi-structured Interview

The second analysis method used in this paper is semi-structured interviews. Lynggaard (2020, p. 185) points out that document analysis is often paired with other research methods, like semi-structured interviews. It pairs well as interviews act as an access point to current issues and help gain an understanding of what actors and documents the respondents deem central in the field of research (Lynggaard, 2020, pp. 190-191). Interviews are one of the most widespread methods in qualitative research, as it can be used to gather a wide range of valuable insights, but interviews are not to be considered a neutral technique. The method has its limitations, but also strengths. The way the interview unfolds depends on the questions asked and the respondent's background and perception of the subject. The goal of an interview is thus to gain insight into the respondents' experiences and take potential bias into account (Tanggaard & Brinkmann, 2020, pp. 33–39).

¹¹ (European Commission, 2023)

¹² (*An EU Approach to Enhance Economic Security*, 2023)

The chosen format is the semi-structured interview, where some of the questions are planned and written down in an interview guide (Appendix 1), and some questions arise out of the dialog. In order to have a common basis of comparison, the interviews are based on the same interview guide. When using the same interview guide on several respondents, the questions need to be formulated to work across the spectrum of knowledge. The interviews will thus be easier to compare, but somewhat more generic. However, individuality still comes through in the respondent’s answers and the non-scripted follow-up questions. The interviews are conducted in Danish, as this is the respondents’ native language, but I realise that nuances of their responses can be lost in translation when converting to English. For full transparency, the transcriptions and in-text quotes will therefore be attached in both Danish and English (Tanggaard & Brinkmann, 2020, pp. 39–47).

3.3.4 Presentation of interview respondents

The respondents invited to the interviews have different backgrounds but work within the same area, lobbying the Danish green energy sector to the EU. Their line of work, specifically following the EU’s renewable energy politics and policies give them unique insight into EU-dynamics, agendas and priorities. They have been chosen based on following criteria: They engage with the EU on behalf of renewable energy producers, they are based in Brussels and work in public affairs and policy advisory, they have some degree of seniority to support their knowledge. The respondents contribute with diverse expertise that goes beyond the available information and conclusions that can be reached through document analysis, making the findings of the thesis closer to the conditions of reality. I have chosen two candidates that live up to all the criteria, and thus deliberately opted for quality of the respondents, rather than quantity (Tanggaard & Brinkmann, 2020, p. 36).

Respondent	Position and background
Jacob Klivager Vestergaard (Appendix 2a & 2b)	Vestergaard has worked in the Danish energy sector since 2019. He started at Dansk Fjernvarme as a political consultant, and after two years he moved to Dansk Solkraft. Dansk Solkraft merged into Green Power Denmark in 2022, where Vestergaard became the head of renewable energy on land and the electricity network. About a year ago he switched to public affairs in Brussels where he is now Head of Department.

Jens Dandanell Petersen (Appendix 3a & 3b)	Petersen works at Dansk Industri in the Brussels office as senior chief consultant. He has previously worked at the Danish Ministry of Climate, Energy and Environment for a number of years, and later at the Danish Energy Agency. Afterwards, Petersen worked at Dong Energy, now called Ørsted, which is Denmark's largest energy company, before joining Dansk Industri.
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Table 5: Presentation of interview respondents

3.3.5 Interview processing

Starting the interview process, respondents were investigated and selected based on the earlier mentioned criteria. Following the selection of relevant respondents, I reached out to them via mail or through the organisation to mediate contact. I then wrote a politely formulated email about my thesis and area of interest and inquired whether they would be interested in answering some questions for my thesis.

We agreed a time and date, and executed the interviews themselves on Teams, as both respondents live and work in Brussels. The interviews were conducted in Danish and based on the attached interview guide (Appendix 1). The interview guide itself is based on the problem area and an assessment of what insight the respondents could contribute regarding their background in the field of green energy interest organisations. When formulating the questions I attempted to avoid leading questions, and questions that can be answered by “yes” or “no” (even though this can sometimes be necessary). The questions endeavoured to be easy to comprehend as to not create any misunderstandings (Tanggaard & Brinkmann, 2020 pp. 48-49).

Following the interview itself, the dialogs were transcribed (Appendix 2a, 2b, 3a & 3b) to make them more applicable for analysis. The transcription tries to stay as loyal to the spoken word as possible, but words like “øh” and similar filler words were omitted to help the text become more coherent. Further, the interviews were conducted in Danish, therefore a translation has been provided, along with the original transcription (Tanggaard & Brinkmann, 2020, pp. 50-52). Interviews have been transcribed and translated by the same person, thus adding to the validity of the interviews and their findings.

After transcribing the interviews, they were subject to coding. The list of codes is a body of keywords derived from the problem area, operationalisation of the theory, and natural themes that occurred in the interviews. The coding can be data-driven, or concept driven, this coding is largely data-driven, as I was interested in coding based on the natural divisions in the

dialog. The purpose of coding the interviews is to gain an overview of the empirical data to use it in the analysis (Tanggaard & Brinkmann, 2020).

Chapter 4: Analysis

4.1 Strategy of analysis

This section will present the strategy of analysis for both the document analysis and the analysis of the semi-structured interviews. This is intended to provide an overview of the execution of the individual parts, and the cooperation between the two sections of analysis.

4.1.2 Execution of the document analysis

In order to answer the research question, the analysis will examine the role of renewable energy after the energy crisis. This will determine whether the role of renewable energy has evolved into more than a catalyst for decarbonisation.

In the Delimitation (1.3) a ‘role’ was defined as *‘the function assumed, or part played by a person or thing in a particular situation’*. To understand the particular role something or someone plays, one must understand the context of the situation. Therefore, the document analysis will firstly present the context of each document, in accordance with O’Learys (2017) eight steps of document analysis (pp. 272-279), and with the intention to uncover the role of renewable energy.

Furthermore, the function or role of renewable energy is expected to be reflected in the EU-documents themselves. Therefore, there will be an overview on the content of each document. In the operationalisation the derived indicators were identified as providing measurements for the theory. They are *security, economic autonomy, power optimisation, and technological leadership* (Gilpin, 2001, pp. 11-12, 14-19, 77 & 136). The analysis will thus use these indicators as points of examination to understand the objectives and motivations of states’ economic and political use of renewable energy (Gilpin, 2001, p. 4). The role of renewable energy will thus be analysed based on the related context, but also the content of each document, based on theoretical indicators.

4.1.3 Execution of the analysis of the semi-structured interview

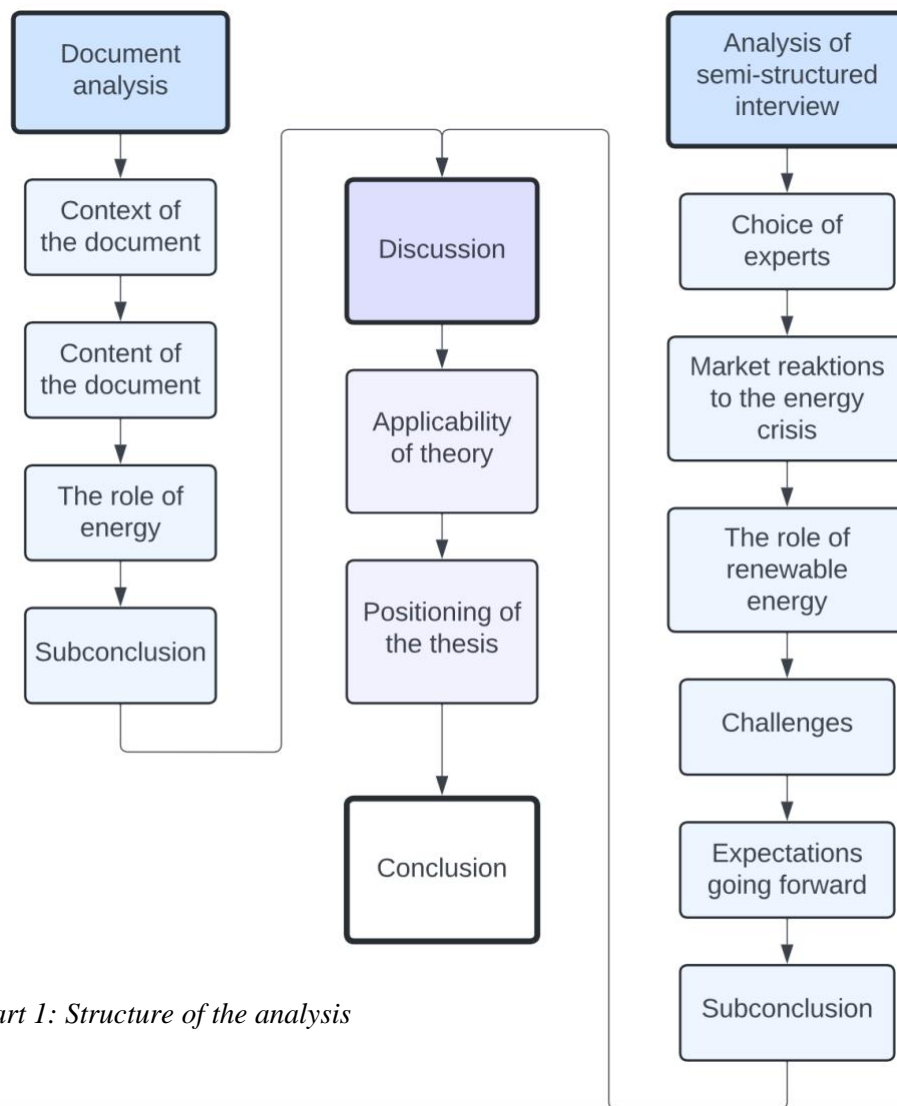
The analysis of the semi-structured interviews will follow the same principles as used in the document analysis. This analysis will therefore start with a section that discusses the expertise

of the chosen respondents to help understand biases and the context of their answers. After this, the analysis will follow with sections derived from the coding and theoretical indicators.

To answer the following problem formulation; *How has the role of renewable energy developed in the EU during and after the energy crisis in 2022?* the interview guide poses questions that are made with a view to analyse the market’s understanding of energy politics and policies in the EU after the energy crisis, rather than specific regulations and strategies.

4.1.4 Structure of the analysis

The structure of the analysis and subsequent discussion is visualised in the following flowchart. The chart shows that the two sections of analysis run concurrently and culminates in a joint Discussion (Cap. 5) and Conclusion (Cap. 6).



Flow chart 1: Structure of the analysis

4.2 Document analysis

The following is an analysis of mainly three documents from the EU that have been produced after, and as a direct or indirect result of, the energy crisis. They all have the ability to showcase the role of energy as a political phenomenon as they regard renewable energy as a tool to achieve certain competitive, economic, and security objectives. The following documents that will be analysed are the RePowerEU Plan, the Net Zero Industry Act, and The European Economic Security Strategy.

4.2.1 RePowerEU

4.2.1.1 The context in which the document was produced

The RePowerEU plan launched in May 2022, as a direct response to the Russian invasion of Ukraine on 24th February 2022. European heads of state and government had discussed at an informal meeting in Versailles in March 2022 how energy dependency on Russia could be reduced. The leaders came to the agreement to phase out Russian fossil fuels and urged the European Commission to make the RePowerEU plan with this purpose. The context in which the document was produced was a direct response to the volatile energy market caused by the Russian invasion of Ukraine (*Tidslinje – Energipriser Og Forsyningssikkerhed*, European Council). The war severely disrupted a system already under pressure with high prices of imported gas. In addition, Russian fossil fuels became a source of unstable supply, as Russia began to use their energy resources as an economic and political weapon, and Gazprom¹³ entirely or partially shut off gas to twelve EU MS during 2022 (Overvad, 2022b). Simultaneously, when the RePowerEU plan was presented, the European Commission had already adopted five wide-ranging and unprecedented packages of sanctions towards Russia, covering coal imports and with additional proposals to phase out oil. (*REPowerEU: A Plan to Rapidly Reduce Dependence on Russian Fossil Fuels and Fast Forward the Green Transition*, 2022). The EU quickly needed to diversify their supplies and find new international partners to buy and import fuel from. But, as Lykke Friis (2022) points out, there is not much democratic oil and gas left in the world markets. The EU needed to be careful not to create new interdependencies with non-democratic countries, with whom they do not share values, and thus create renewed energy security concerns. Together with the plan to detach from Russia's

¹³ Gazprom is an energy cooperation with monopoly of all export of Russian pipeline gas. The cooperation is Russia's biggest company and the Russian state is the majority owner ('Explained: What Is Gazprom and What Makes It so Powerful?', 2022).

fossil fuels by 2027, this became the incentive to speed up the clean energy transition (Friis, 2022).

4.2.1.2 Content of the RePowerEU plan

The RePowerEU plan builds upon the FitFor55 package of proposals¹⁴, and puts forward a set of actions to; “[1] *save energy*, [2] *diversify supplies*, [3] *quickly substitute fossil fuels by accelerating Europe’s clean energy transition*, [and 4] *smartly combine investments and reforms*.” (European Commission, 2022, p. 1). Together, the actions are intended to transform the structure of the EU’s energy system. The key to execute the plan is fast implementation of higher targets of energy transition and energy efficiency. Energy efficiency basically means to reduce consumption at a faster pace and phase out Russian fossil fuels completely. But there is still a great demand for Russian energy, as shifting away from Russian energy will only be possible if supply is secured from alternative sources. This results in two things, first that coal and nuclear power might be used longer than initially expected, but also that supply might be created by renewing the incentive to produce sustainable energy within the EU itself (European Commission, 2022, p. 2). The communication outlining the Repower EU plan presented poll findings that showed that 85% of people believed that the EU should reduce dependency on Russia, and 84% believed that the war made it more urgent for the EU MS to invest in renewable energy (Directorate-General for Communication, 2022).

The way the EU proposes to substitute fossil fuels and accelerate Europe’s clean energy transition is by boosting renewable energy, accelerating hydrogen, scaling up biomethane, reducing fossil consumption in industrial and transport sectors, completing the regulatory framework, and speeding up permitting and innovation (European Commission, 2022, pp. 6-10). To create the incentive to reach these goals, the EU increased the target of renewable energy consumption in the Renewable Energy Directive to 45% by 2030, instead of the earlier 40%. The revised directive entered into force the 20th November 2023 (*Renewable Energy Directive*, 2024). However, supportive functions are needed to help EU MS reach the targets, and the plan thus included e.g. regulation to strengthen supply chains for sustainable technologies, mapping the infrastructure needs, establishing partnerships, publishing

¹⁴ The EU's goals of reducing net greenhouse gas emissions with at least 55% by 2030. The package aims to make sure EU-legislation is in accordance with the 2030 goals. (*Fit for 55*, 2024).

guidances, increased funding from Horizon Europe¹⁵ and the innovation fund¹⁶ in selected areas, and increased financing from the European Investment Bank (EIB) (s. 6-7).

A key obstacle to “*unleashing the renewables revolution and for the competitiveness of the renewable energy industry*” was identified as the complex permitting process (European Commission, 2022, p. 11). Permits for wind projects could take up to nine years to obtain, with the national rules and administrative capacity varying greatly. To accelerate the permitting procedures for projects and their infrastructure, the European Commission amended their proposal on the Renewable Energy Directive to include an operationalisation of renewable energy as an “*overriding public interest*” and simplifying permitting (Ibid).

4.2.1.3 The role of energy explained with theory

The RePowerEU plan is very comprehensive, and an important move from the European Commission at the time, but implementation will take a lot of time and money (Overvad, 2022b). As mentioned, the RePowerEU plan builds upon the FitFor55 package of proposals, that already included a commitment to reduce net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels (*REPowerEU: A Plan to Rapidly Reduce Dependence on Russian Fossil Fuels and Fast Forward the Green Transition*, 2022). The FitFor55 package is a part of the European Green Deal¹⁷. The package of proposals for legislation had been in the midst of negotiations and passed at the very start of the energy crisis in late 2021. It is clear that, at the onset of the energy crisis, there were existing measures put in plan to reduce emissions in the EU. There were even speculations at the time, whether the energy crisis would hurt the negotiations of the content of the FitFor55 package (Overvad, 2021). But it seems that all worries were unjustified. The RePowerEU plan was not part of the original proposals of the European Green Deal and the FitFor55 package of legislation proposals, but came as an addition, as there were new grounds for action toward renewable energy. However, the incentive to create the RePowerEU plan was not solely related to climate neutrality like the European Green Deal, whose main purpose is to make the EU climate-neutral by 2050 (*Delivering the European Green Deal*, European Commission).

¹⁵ Horizon Europe is the EU’s framework and funding programme for research and innovation (European Commission, 2023b).

¹⁶ The Innovation Fund supports all Member States’ innovation in low-carbon technologies and processes (*Innovation Fund*, European Commission)

¹⁷ “*The European Green Deal is the EU's long-term growth plan to make Europe climate neutral by 2050. This target is enshrined in the European Climate Law [...]*” (*REPowerEU: A Plan to Rapidly Reduce Dependence on Russian Fossil Fuels and Fast Forward the Green Transition*, 2022).

The RePowerEU plan to transition to green and renewable energy is described in the European Commission's press release: "*The green transformation will strengthen economic growth, security, and climate action for Europe and our partners*" (RePowerEU: A Plan to Rapidly Reduce Dependence on Russian Fossil Fuels and Fast Forward the Green Transition, 2022). The conclusion of the RePowerEU plan states that; "*The time to reduce Europe's strategic energy dependence is now. [...] The green transformation of Europe's energy system will strengthen economic growth, reinforce its industrial leadership, and put Europe on a path towards climate neutrality by 2050.*" (European Commission, 2022, p. 20). The RePowerEU plan showcases the active choice to accelerate the transition to renewable energy as a result of a crisis that is more or less unrelated to climate change. The context the document was produced in is one of crisis and conflict. The main role of said renewable energy is still related to climate action, but renewable energy is now integrated into a political plan to achieve economic growth, security of supply, and security from hostile interdependencies. All of these become the functions of renewable energy, that defines its role as strengthening growth and security. The objectives align with the derived indicators of GPE. The plan to achieve economic growth and secure low energy prices relate to the indicator 'economic autonomy', and the security of supply and security from hostile energy dependencies relate to the indicator 'security'. The indicators show that there are several measures that explain how the EU's RePowerEU plan is shaped by 'state interests' and give incentive to create the policy.

4.2.2 Net-Zero Industry Act

4.2.2.1 The context in which the document was produced

The EU's competitive abilities have come under much pressure during and after the energy crisis. The high energy prices hurt consumers, and companies all over Europe struggled to cover their expenses. Low energy prices had been one of the EU's competitive advantages for many years, making politicians react to the situation, now that the EU no longer had that advantage (Overvad, 2022h). Even though energy prices have fallen since the energy crisis was at its highest in 2022, they have not reached pre-crisis levels (Directorate-General for Energy, 2024). To enhance competitiveness of European net-zero industry¹⁸, incentivise the production of cheaper energy to support a fast transition to climate neutrality, and respond to the USA's

¹⁸ "[...] technologies that support the clean energy transition and release extremely low, zero or negative greenhouse gas emissions when they operate." (Net-Zero Industry Act, European Commission).

Inflation Reduction Act (IRA)¹⁹ the EU proposed the Green Deal Industrial Plan in February 2023 (*The Green Deal Industrial Plan: Putting Europe's Net-Zero Industry in the Lead*, 2023). The plan compliments the earlier mentioned effort of the European Green Deal and the RePowerEU plan to strengthen the SEM with secure and affordable energy. The plan is based on four pillars; “[1] a predictable and simplified regulatory environment, [2] speeding up access to finance, [3] enhancing skills, and [4] open trade for resilient supply chains.” (*The Green Deal Industrial Plan: Putting Europe's Net-Zero Industry in the Lead*, 2023). Within the first pillar lies the Net-Zero Industry Act that provides a regulatory framework for strategic green technologies to get simplified regulation and fast permitting and promoting and developing support to scale up these technologies (Ibid). The Net-Zero Industry Act was published in March 2023, and deals with, what the RePowerEU plan identified as one of the key obstacles to the upscaling of renewable energy production: permitting.

As stated in the presentation of the regulation's proposal, one central reason for the overhauls of the energy system is that competitors have already deployed measures to secure their part of the market of net-zero technologies²⁰, e.g. the USA's IRA. It has been described as a global technology race with countries eager to secure their supply of clean energy. The EU needs to support the manufacturing of technologies that can help reach the climate goals and renewable energy goals that were scaled up in the RePowerEU plan (European Commission, 2023, pp. 1–2 & 22). But, if the EU manages to transition to an increasingly electrified energy system (reducing fossil fuels), and they do not produce their own sustainable energy supply, they can potentially once again be caught up in severe interdependencies. For the EU to successfully produce sustainable energy, like wind and solar power, they are increasingly dependent on materials from China²¹ amongst others. The EU thus stands at a point where they must consider the security of supplies, as they might be replacing fossil fuel dependencies with raw material dependencies, and then be back where they started (Ibid). Although the Net-Zero Industry Act states that “*The goal is not only to reduce dependencies, but also to contribute to providing industry in the EU with the technologies it needs to decarbonise, and to provide citizens with clean, affordable, and secure energy [...]*” (European Commission, 2023, p. 2). This is why the

¹⁹ The 'Inflation Reduction Act' is the USA's climate legislation and investment, designed to reduce the USA's CO2 emissions by incentivising investments in strategic clean and sustainable energy technologies, much like the EU's Net-Zero Industry Act (Dansk Industri, 2022).

²⁰ Net-zero technologies mean renewable energy technologies (European Commission, 2023, p. 36).

²¹ The EU is a net importer of energy technologies like batteries, solar modules, and fuel cells from mostly China (European Commission, 2023, p. 1).

Net-Zero Industry Act is accompanied with the Critical Raw Materials Act, which is intended to ensure that there are sufficient materials for manufacturing of the key strategic technologies for the industry and citizens (*The Green Deal Industrial Plan: Putting Europe's Net-Zero Industry in the Lead*, 2023).

4.2.2.2 Content of the Net-Zero Industry Act

The Net-Zero Industry Act takes the form of a regulation rather than a directive to secure a uniform application of procedures across the industrial sector and the internal market. The hope being that a homogeneous approach will match the need of the market across the EU and strengthen coordination. The regulation aims to increase resilience and security of energy supply by ensuring legal certainty and accelerating the production of manufacturing facilities through simpler and quicker permitting procedures. It also promotes the development of new and renewable energy sources. Further, the overall objective is to strengthen the EU's competitive abilities and industry in Net-Zero technologies, as the EU has committed to accelerating the decarbonisation of its economy and renewable energy sources (European Commission, 2023, pp. 8–10, 17 & 63).

In order to achieve the 2030 objectives and the net-zero goal by 2025, eight technologies have been granted a particular strategic status. These include; “ [1] *solar photovoltaic and solar thermal technologies*, [2] *onshore and offshore renewable technologies*, [3] *battery/storage technologies*, [4] *heat pumps and geothermal energy technologies*, [5] *electrolysers and fuel cells*, [6] *sustainable biogas/biomethane*, [7] *carbon capture and storage technologies* and [8] *grid technologies*.” (European Commission, 2023, p. 20). These are deemed ‘strategic’ as they play a role in the EU's open strategic autonomy - a concept that surfaced in the first official EU document in 2020 in relation to the economic shock the EU was experiencing from the Covid19 pandemic. The term was specifically used in connection with security of supply chains of essential goods (European Commission, 2020, p. 14). It can be defined as: “*Open Strategic Autonomy ensures the capacity to cope alone if necessary but without ruling out cooperation whenever possible*” (European Parliament, 2023). In the Net-Zero Industry Act it refers to the supply of clean and affordable energy. Given the strategic role, these eight technologies are granted faster permitting procedures, have the highest status possible under national law, and have added support to crowd-in investments (European Commission, 2023, p. 20).

4.2.2.3 The role of energy explained with theory

This regulation endeavours to increase and ensure security of energy supply through the development of new and renewable energy sources. If it is implemented and executed successfully it can also help across all the energy intensive industries in Europe that have been impacted by the energy crisis. This exemplifies how the EU argues that the acceleration of renewable energy has several concurrent positive outcomes if carried out fully (European Commission, 2023, p. 2). However, ultimately the EU MS decide themselves which energy sources they choose to use. It has been pointed out that the acceleration of renewable energy comes at a high cost. Therefore, it is imperative to secure and incentivise more private investments and coordination across MS (Overvad, 2023b). This is something the EU is also aware of:

“Given the complexity and the transnational character of net-zero technologies, uncoordinated national measures to ensure access to those technologies would have a high potential of distorting competition and fragmenting the SEM. Therefore, to safeguard the functioning of the Single market it is necessary to create a common Union legal framework to collectively address this central challenge by increasing the Union’s resilience and security of supply in the field of net-zero technologies.” (European Commission, 2023, pp. 17–18).

It is clear that the EU is trying to create a strong incentive for cooperation and cross-national partnerships in order to gain a strong and coherent sustainable energy system. The role of renewable energy has undeniably been put in connection with sustaining a competitive European net-zero industry. With RePowerEU the intention was to create a secure energy supply and cut interdependencies. The Net-Zero Industry Act is the attempt to facilitate those intentions, whilst at the same time securing the EU a place in the geopolitical race for a net-zero transformation. Falling behind means an unstable economy and potential new interdependencies with the states that first produce the relevant net-zero technologies (European Commission, 2023, p. 19). The Net-Zero Industry Act thus gives the political role of renewable energy an added dimension compared to the RePowerEU plan.

Whereas the RePowerEU plan incentivised more renewable energy, the Net-Zero Industry Act had to make sure that there was a basis for the EU producing more renewable energy. These indicators shown to measure the EU’s interests are, like before, in line with the indicators, ‘security’ and ‘economic autonomy’, as it builds on the goals set out in the RePowerEU plan. However, the Net-Zero Industry Act is also concerned with geopolitical competition with

China and the USA. It turns out that a strong competitive ability in this case is undeniably connected to having ‘technological leadership’. The addition of this indicator gives impetus to the objectives of the EU regulation.

4.2.3 European Economic Security Strategy (A communication)

4.2.3.1 The context in which the document was produced

When the European Green Deal was originally published in 2019 the climate movement was at a high, which manifested in the European Parliament election. Back then, the European Commission already saw the potential to link economic growth and the green transition, as it wanted to create a business case for the green transition. However, the repetitive state of crisis management made it hard for the EU to navigate in an increasingly insecure geopolitical environment. A growth strategy was included in the European Green Deal from the start, but geopolitical competition was of increasing concern, which constituted an underlying incentive in the need to protect strategic renewable technologies in later regulation (Sørensen, 2024). This position is reflected in a post from the thinktank, Europa: “*The EGD [European Green Deal] has always been a growth strategy. Yet, a perception among EU policymakers that the EU’s geopolitical environment has been changed by growing geopolitical competition and insecurity, is increasingly reflected in the conceptualisation of the EU’s sustainable competitiveness.*” (Sørensen, 2024). Sustainable competitiveness here refers to decarbonisation and simultaneously making economic profits from it, as seen in the USA’s Inflation Reduction Act and the EU’s Net-Zero Industry Act.

The thesis has at this point already underlined the fact that the EU faces growing geopolitical tensions with increased geostrategic and geoeconomic competition. The European Commission and the High Representative for Common, Foreign, and Security Policy published a press release with the Joint Communication on the European Economic Security Strategy in 2023. Here, the energy crisis is not stated as a background cause for the creation of the strategy. However, Russia’s war in Ukraine has been cited as a development that has “*highlighted the risks inherent in certain economic dependencies.*” (An EU Approach to Enhance Economic Security, 2023, p. 2). I would argue that the energy crisis, being of economic character as well, is closely related to and impossible to distinguish from the negative economic outcomes of the war in Ukraine. Even if the energy crisis is not stated as one of the reasons to formulate this

strategy, the economic dependencies mentioned above certainly are, and they are drivers of all the documents included in this thesis (*An EU Approach to Enhance Economic Security*, 2023).

4.2.3.2 Content of the Joint Communication on a European Economic Security Strategy

The Joint Communication on a European Economic Security Strategy is a proposed strategy that; “ [...] *sets out a common framework for achieving economic security by promoting the EU's economic base and competitiveness [...]*” (*An EU Approach to Enhance Economic Security*, 2023, p. 1). ‘Economic Security’ as a concept has become a part of the EU’s trade concept of ‘open strategic autonomy’ – previously mentioned in section 4.2.2.2. But economic security should also be defined to gain a common understanding of its use. The European Parliament has made a definition that reads:

“[economic security is] *trade defence measures that try to prevent economic harm arising from economic coercion, or to protect the economy from broader trade disruptions. From this perspective, economic security strategies and instruments are those that aim to ‘secure’ economic outcomes against certain types of shocks. This definition would include industrial and trade policies that diversify the supply of key inputs, trade defence measures that aim to deter economic coercion [...], and policies that mitigate shocks when they occur.*” (*European Economic Security: Current Practices and Further Development*, 2024, p. 4).

Through this definition economic security offers justification for the use of trade policy interventions, industrial policies and other vertical initiatives. The strategy does not necessarily propose new material for regulation but connects existing regulations and acts to the economic security agenda. This includes the RePowerEU plan and the Net-Zero Industry Act. The proposed strategy ultimately acts as the pinnacle of political developments that have followed from the energy crisis and Russia’s war in Ukraine. The Communication states that beyond economic security, its aim is to de-risk and promote technological edge in critical sectors. The implementation will mean joining internal and external policies and partnering with the private sector (European Commission, 2023a, pp. 2–3).

To ensure that economic and security interests support each other, the Strategy will depend on three main priorities; “(1) *promoting our own competitiveness; (2) protecting ourselves from economic security risks; and (3) partnering with the broadest possible range of countries who share our concerns or interests on economic security.*” (*European Commission*, 2023a, p. 2). Under the first priority lies the measures that aim to promote the EU’s economic base,

competitiveness and growth, by fostering the strategic areas for e.g. net-zero industries and clean energy. (European Commission, 2023a, pp. 2 & 5). The RePowerEU plan is mentioned here as a key to ensure energy security and supply. The Net-Zero Industry Act is mentioned as the proposal that can help manufacture said net-zero technologies to ensure supply.

Within the Communication is the identification of four broad risks to economic security: “(1) *resilience of supply chains*; (2) *physical and cyber security of critical infrastructure*; (3) *technology security and technology leakage*; and (4) *weaponisation of economic dependencies or economic coercion*.” (European Commission, 2023a, p. 4). The first risk specifically mentions a need for resilience of supply chains related to energy security. The Communication expresses that any strategic dependencies that may pose economic security risks will be addressed by rigorous trade defence instruments and foreign subsidies.

4.2.3.3 The role of energy

As mentioned in the previous section, the strategy's broad goal of ‘promoting competitiveness’ is the section wherein all the earlier documents and policies come together. The strategy goes beyond measures of traditional security concerns and illustrates that production and scale-up of strategic technologies, and the related sustainable competitiveness, becomes a security concern in itself (Sørensen, 2024).

The broad concept of economic security sets the scene to justify the strong initiatives of sustainable competitiveness as a means to reach net-zero. Unlike the European Green Deal, newer initiatives like the RePowerEU plan and the Net-Zero Industry Act are concerned with rapid upscaling of renewable energy to ensure competitiveness and economic autonomy. The aim for decarbonizing Europe and green growth may be in the European Green Deal but lacks the urgency and the same security concerns. The strategic and political role of renewable energy thus becomes a means to win the global cleantech race, so that the EU can ensure their economic security and self-sufficiency in a world with rising geopolitical tensions and competition. In this sense, a strong competitive industry in renewable energy becomes an economic security concern (Ibid). Economic security covers two of the theory derived indicators, as it connects the ‘security’ and ‘economic autonomy’ aspects, and ‘technological leadership’ becomes not only a goal in itself, but a means to achieve the objectives of ‘security’ and ‘economic autonomy’.

4.2.4 Subconclusion

The first document, RePowerEU, shows the EU's immediate reaction to the energy crisis and Russia's invasion of Ukraine. Its reactions align with the indicators of 'security' and 'economic autonomy' as the objective and intention of the EU is to be less dependent on hostile interdependencies, both in an economic and security sense.

The Net-Zero Industry Act follows up on the RePowerEU plan with measures that facilitate the goals set in the latter. The Act additionally incorporates considerations of global competition, which stems from the reluctance to gain new interdependencies. This being one of the original reasons for the energy crisis, even before the war in Ukraine. The Act aligns with the indicators, 'security' and 'economic autonomy', like the RePowerEU plan, but with the inclusion of the indicator 'technological leadership'.

The last document, the Communication on a European Economic Security Strategy, incorporates all the economic, security, competitive and geopolitical concerns that have materialised in the years during and after the energy crisis. It entails the collected attempt to connect all plans, policies and regulations toward one goal of economic security. Economic security is defined as; *“strategies and instruments [...] that aim to ‘secure’ economic outcomes against certain types of shocks. This definition would include industrial and trade policies that diversify the supply of key inputs, trade defence measures that aim to deter economic coercion [...], and policies that mitigate shocks when they occur.”* (European Economic Security: Current Practices and Further Development, 2024, p. 4). It encompasses all the earlier mentioned theory derived indicators, and perhaps also the last indicator of 'power optimisation'. If all the objectives of the policies and strategies are met, the EU will in turn optimise their power and geopolitical position.

This paper makes the inference that the role of renewable energy is to facilitate the EU's objectives toward competitiveness, security and economic autonomy following the energy crisis. In other words, the EU produces plans, strategies, and regulation that are meant to strengthen renewable energy production. In turn, renewable energy is expected to strengthen the EU's security and economy.

4.3 Semi-structured interviews

The analysis of the interviews will show whether the renewable energy sector's interests follow the theory derived indicators, and also answer how the renewable energy sector perceives the

EU's chosen point of procedure after the energy crisis. Through the use of interviews, it is possible to triangulate the findings in the document analysis and gain a better understanding of the role of renewable energy in the EU.

4.3.1 The use of the Danish renewable energy sector

When determining who to interview as experts in relation to renewable energy in the EU, the most obvious choice is those working in the energy sector. The reason that representatives from various energy ministries in the MS are not selected, is due to the conceptualisation of the 'state' through the theory. This paper theorises that the EU is an extension of the MS and is thus a platform for them to promote national and collective economic and political objectives (Gilpin, 2001, p. 11). The EU therefore constitutes the role of the 'state'. This means that if this paper was to include interviews with representatives from the MS, they would presumably reflect the same interests and objectives as showcased in the EU documents. However, I would argue that there is variance in national interests, and the interests reflected by the EU are a condensation and intersection of the MS's combined national interests. The true question then remains, what determines the individual national interests? This could potentially be the size and success of their respective renewable energy sectors. For example, if a country has a very small renewable energy sector, the civil service will be less likely to have extensive experience on the subject. The people that have the truest interest in following the political developments regarding renewable energy in the EU must be the owners of business organisations that represent the energy sector, i.e. representatives of those making profits from it. These are often nationally established; therefore, the most apparent experts can be found in MS with large renewable energy sectors.

In Denmark, renewable energy sources constituted 79 pct of the collective electricity production as of March 2023, which puts them at the top of the scale together with Austria (Overvad, 2023a). This does not mean that Denmark and Austria consume 79% renewable energy, as they both still rely on imports to cover the countries' energy demands. Denmark has an import dependency on 32,3 pct, and Austria has an import dependency on 51,8%. Ultimately, a country can have a high percentage of renewable energy production, and still rely heavily on energy imports. This paper uses employees in the Danish energy sector as interview experts because of the country's lower import dependency. (*Interaktivt Europakort Gør Status På Elektrificeringen i 42 Lande*, 2024).

Lastly, the argument for using experts from the energy sector is to analyse the concept of the 'market' derived from the theory. Sector experts are actors within the market, and there

are theory derived indicators to measure the market's interests. These indicators are 'favourable economic policies' and 'a strong competitive position'.

4.3.2 The market's reactions to the energy crisis

The most prevalent view that is reflected by all respondents is that the initial idea of the European Commission was to change the marginal cost pricing system which would have been detrimental to the energy market. The marginal cost pricing system entails that the price of energy is determined by the most expensive purchased energy source. When one of the energy sources increases in price, the overall cost rises. This is what happened in the energy crisis when the price of gas increased substantially. The system has the advantage that it creates incentives to invest in the cheapest form of energy, which is green and renewable energy, but on the other hand meant that the whole of Europe became affected financially when the price of gas rose in some MS. This initially started a discussion about the need to reform the energy market's pricing system (Sørensen, 2022a).

The marginal cost pricing system caused the energy sector to have higher earnings than they would otherwise have, under the energy crisis, as the high price of gas gave the renewable energy sector a huge return. This was obviously advantageous for Denmark, but not all MS benefitted. Some countries requested a system that can counteract a general increase in the price of electricity in cases where the price of one energy source rises sharply (Sørensen, 2022b). The Head of Green Power Denmark's (GPD) EU department's views on a reform is:

"På den korte bane vil det måske kunne sænke elprisen, hvis man ændrer den marginale prissætningsmodel og adskiller VE [vedvarende energi] fra fossil produktion, som Von Der Leyen annoncerede i sin tid. Men incitamentet til at opsætte vedvarende energi bliver også mindre, fordi businesscasen forværres og det vil på den lange bane betyde en højere pris for forbrugerne og have katastrofale påvirkninger på udbygningen af den grønne energi." (J. K. Vestergaard, personal communication, 2024, p. 4).

[In the short term it might decrease the price of electricity, if you change the marginal cost pricing model and detach renewable energy from fossil production as Von Der Leyen announced at that time. But, the incentive to set up renewable energy will decrease because the business case worsens and it will, in the long run, mean a higher price for the consumers and have catastrophic impacts on the development of green energy.]

This goes to show that the price of energy is a very important factor in production and support of renewable energy. The market system did undergo a reform, but it was not as comprehensive as the renewable energy sector might have feared (J. K. Vestergaard, personal communication, 2024, p. 4). Something that is mentioned in connection with pricing, and that comes up repeatedly through the interviews, is that without proper pricing, the industry does not have a strong competitive ability (J. D. Petersen, personal communication, 2024, p. 2). The market's interest in maintaining the cost pricing model that gives them the highest return is in line with the theory derived indicators. The energy sector is ultimately interested in having the most 'favourable economic policies' for their business, and will therefore work towards that objective (Gilpin, 2001, p. 38).

4.3.3 The role of renewable energy

One of the EU's strongest incentives to scale up renewable energy is to gain a global competitive advantage. This has been reflected through the document analysis in relation to avoiding future economic dependencies. But competitive abilities are also of highest importance for the energy sector. This has become increasingly clear after the energy crisis, as other regions of the world, like China and the USA, now have lower energy prices than Europe (J. D. Petersen, personal communication, 2024, p. 2). The Head of GPD's EU Department underlines that the EU relies on renewable energy to lower energy prices and strengthen competitive abilities to such an extent that climate considerations are far from the only goal of renewable energy:

"Hvor det før var vindmøller og solceller, der skulle støttes, er det i dag den billigste energiform at sætte op. Så i dag er diskussionen ikke kun om at det er bedre for klimaet, men i høj grad en diskussion om konkurrenceevne – fordi det er mere konkurrencedygtigt at bruge vindmøller og solceller end fossile brændsler." (J. K. Vestergaard, personal communication, 2024, p. 3).

[Where it used to be windmills and solar cells that needed support, they are now the cheapest energy sources to put up. So, today the discussion is not only about if it is better for the climate, but also to a great extent a discussion of competitive ability - because it is more competitive to use windmills and solar cells than fossil fuels"]

Senior Chief Consultant in Dansk Industri has reflected on the same subject. Renewable energy supports increasingly broad political goals, that go beyond climate action:

“Hvordan kan man ‘merge’ det med at have en stærk konkurrencekraft i Europa [...] samtidig med at vi fortsætter med den grønne omstilling og når i mål med de politiske målsætninger, og hvad for nogle værktøjer skal man bruge til det. Der mener jeg selvfølgelig at et af dem er, at vi jo selvfølgelig skal bygge noget mere vedvarende energi, og derved få øget udbuddet af energi i Europa.” (J. D. Petersen, personal communication, 2024, p. 3).

[How can we merge a strong competitive ability in Europe [...] whilst simultaneously continuing the green transition and reach the political goals, and what tools do you use for that? Here I mean of course that one of them are that we obviously have to build more renewable energy, and thus increase the supply of energy in Europe]

These statements add to the discussion of which purpose renewable energy serves. The respondents reflect on the fact that renewable energy production is competitive and has a security role. Another similarity is the mentioning of ‘climate’, but more so the decrease of climate-talk in the current renewable energy debate. However, when it comes to questions about the effect and implementation of renewable energy policies, the perception of the respondents is quite different from the document analysis.

Two EU measures came up in connection with renewable energy through the interview. These were the Renewable Energy Directive and the Green Deal Industrial plan (J. K. Vestergaard, personal communication, 2024, p. 5) (J. D. Petersen, personal communication, 2024, p. 3). The Renewable Energy Directive is implemented in order to reach the goals in the RePowerEU plan, and the Green Deal Industrial plan is the basis of the Net-Zero Industry Act, both measures that have been covered earlier in this paper in sections 4.2.1 and 4.2.2. The respondents mentioned the policies in relation to the question: Which measures do you see as the most effective or successful in relation to accelerating the upscaling of renewable energy in the EU? However, the respondents are generally quite sceptical regarding the effect and implementation of said policies. The renewable energy directive does not seem to have had a very accelerating effect in Denmark but has potentially had a greater effect in MS that did not have a large renewable energy sector before the adoption of the directive (J. K. Vestergaard, personal communication, 2024, p. 5). As for the Green Deal Industrial plan’s objective to escalate renewable energy and connect the climate goals to competitive goals, the answer is that the objectives have simply not manifested themselves yet, according to Senior Chief Consultant in Dansk Industri (J. D. Petersen, personal communication, 2024, p. 3).

4.3.4 Challenges

This brings us to the challenges that have come to light with the EU's ambitions to transition to renewable energy. The respondents observed slow implementation and highlighted a number of challenges that have presented themselves in connection with the scale-up of renewable energy. The Head of GPD's EU Department states:

"Der er mange store udfordringer, vi ser ind i. En af dem er konkurrenceevnen og her skal vi have opbygget en stærk grøn industri. Her taber vi til USA og Kina, der på grund af statsstøtte kan udkonkurrere den grønne europæiske industri og jeg ser det som en af de primære faktorer for manglende konkurrenceevne i Europa." (J. K. Vestergaard, personal communication, 2024, pp. 5–6).

[We are looking at many great challenges. One of them is the competitive ability and this is where we have to build a strong green industry. We are losing to the USA and China who can outperform the European green industry because of state subsidies, and I see this as one of the primary factors in the lack of competitiveness in Europe.]

This quote shows that the challenges that the EU faces are not just based on whether MS can keep up with technological development or whether the EU can create incentives to invest in the energy industry. The EU and MS are fighting to compete with economic powers that have directly intervened in the market, by injecting money into their energy industries (J. K. Vestergaard, personal communication, 2024, p. 6). This is a fight that MS will lose, as the financial leeway of a country like Denmark is substantially less than that of China e.g. A potential solution could be common EU funds to provide security for investments and draw out new funding (J. D. Petersen, personal communication, 2024), p. 7). However, a report from the Institute of Climate Economics estimates that there is an investment deficit of around 406 billion euros yearly to achieve the 2030 climate goals (Calipel et al., 2024). Further, according to the European Central Bank, 75-80 pct of the financing has to come from private funds to cover the EU's ambitions (Andersson et al., 2024).

The challenges posed by the respondents are also internal in nature. The lack of funding to support renewable energy ambitions also makes it hard to build the needed infrastructure. Senior Chief Consultant in Dansk Industri mentions the following:

"Så vil jeg også nævne, at det at have nogle stærke klimamålsætninger, også på udbygning af vedvarende energi, er rigtig vigtigt, men det kan ikke stå alene, og det er også det, man er

blevet klogere på – hvor vigtigt og vanskeligt og omkostningstungt det er at få udbygget den nødvendige infrastruktur, der er behov for i den grønne omstilling.” (J. D. Petersen, personal communication, 2024, p. 4).

[I would like to mention that having strong climate goals, also regarding the upscaling of renewable energy, is very important, but it cannot stand alone, and that is also what we are now wiser about - how important and difficult and costly it is to build the necessary infrastructure that is needed in the green transition.]

The infrastructure is a very important part of the equation, and at times it has been deliberately overlooked because it comes at a high price. Financing the transition to renewable energy and building the infrastructure to support it are just two of the challenges posed by the respondents. In addition, there is a need for faster permitting of constructions, with examples of permitting taking up to seven years. This is a sign of heavy bureaucracy inhibiting development, prompting the industry to demand simpler procedures (J. D. Petersen, personal communication, 2024, p. 6). Further, the environmental implications that follow the expansion of infrastructure are worrying in themselves. It is proving increasingly difficult to place high voltage cables without interfering with inhabitants, and there are added concerns about whether faster permitting could compromise environmental investigations made in conjunction with construction enquiries (J. D. Petersen, personal communication, 2024, pp. 5–7)

4.3.5 Expectations going forward

Going forward it is expected that there will be a bigger focus on infrastructure and electrification in general. Electricity is cheaper compared to some of the other energy sources, but it will require development of new technologies to electrify the industries. If electrification was successful, demand for renewable energy would naturally increase (J. D. Petersen, personal communication, 2024, p. 7). As mentioned earlier in the document analysis, technological leadership is highly coveted and is already reflected in both the Net-Zero Industry Act and the Communication on European Economic Security Strategy. But, in order to produce and develop strategic net-zero technologies, the EU must have access to critical raw materials. The Head of GPD’s EU Department states:

”En af de store diskussioner fremadrettet bliver den sikkerhedsmæssige situation i Europa, og her vil der komme et større fokus på at have adgang til egne strategiske ressourcer, som for eksempel adgangen til egen teknologi og industri i udviklingen af vedvarende energi. Det tror

jeg derfor også kommer til at fylde meget for kommissionen.” (J. K. Vestergaard, personal communication, 2024, p. 6).

[One of the big discussions moving forward will be the security situation in Europe, and here there will be a greater focus on having access to our own strategic resources, such as access to our own technology and industry in the development of renewable energy. I therefore believe that this will also be of great importance to the commission.]

The expectation for the future is an increased focus on security besides competitiveness. Having our own resources in strategic areas will help the EU lessen hostile interdependencies in an increasingly uncertain future (J. K. Vestergaard, personal communication, 2024, pp. 5–7).

4.3.6 Subconclusion

The semi-structured interviews show that the energy industry has picked up on the tendencies reflected in EU documents. Emphasis was especially placed on the competitiveness of the EU's net-zero industry. The EU wants to have a competitive industry to boost the overall economy and be self-sufficient in order to secure energy supply. The industry also wants to be competitive to help their overall business, which confirms the theory derived indicator of ‘a strong competitive position’. The way to achieve this would be through EU policies that strengthen the market and the industry’s business model. The other indicator of the market’s interests is ‘favourable economic policies’, and the interview clearly exhibits the wish for additional supportive measures to stand against the USA and China (Gilpin, 2001, p. 38). This is expressed through the critique placed on the existing policies and the emphasis on challenges that have not yet been accounted for.

A common theme in GPE is the clash between the interests of the state and market. This analysis shows that the EU and the energy industry largely have the same goals. However, the respondents do criticize the speed of implementation and the degree of financial support for the renewable energy objectives (Gilpin, 2001, pp- 80-82). The market actors prefer the economy to be as open as possible, but in this situation, they also acknowledge that they simply cannot compete with large state actors, thus welcoming trade protection policies (J. D. Petersen, personal communication, 2024, p. 5).

Even though the EU and the industry have different indicators as drivers of motivation in interactions between state and market, they largely work toward the same goals regarding renewable energy. The interviews confirm that the role of renewable energy has evolved from

being a means to achieve net-zero, to having a broader function regarding competition, economic autonomy, self-sufficiency and security against hostile actors.

Chapter 5: Discussion

5.1 The applicability of the theory

The theory of GPE is described as a form of interplay between the state and market. The state is the main actor, and it uses the market as a means to achieve and exercise power. By this definition, the market can be used toward obtaining certain political and economic objectives (Gilpin, 1987, pp. 11 & 354). In this paper the EU represents the state, and the Danish energy sector represents the market. Whether the theory holds a substantial amount of explanatory power can be determined by the conformity between theory derived concepts and indicators, and the deductions made in the analysis. Throughout the analysis there has been considerable conformity between the deductions regarding EU's objectives for renewable energy, and the indicators 'security', 'economic autonomy' and 'technological leadership'. There is also conformity between the interests of the energy sector and theory-based indicators regarding the market interests. When examining the role of renewable energy in the EU, one needs to understand what purpose renewable energy serves in the specific context. The role of renewable energy has shown to serve objectives directly correlated with the operationalised indicators.

However, the theory only applies, if the argument holds, that the EU can represent the concept of 'state'. In section 2.3, I argued that the EU is a political actor and has power over the market, therefore it could constitute the role of the state, or at least an extension of the state. But, according to Gilpin the nation-state remains the dominant actor in an international context (Gilpin, 2001, pp. 14-19). He writes that national governments make decisions on economic matters that provide the framework for other non-state actors to function within, but where does this leave the EU? The EU does represent the MS's interests, but the MS don't necessarily agree amongst themselves. The EU also provides a framework for non-state actors to function within, in the form of the SEM. But does the EU hold its power by its own accord or by the power vested in it by the MS? It has been pointed out that some scholars believe that market forces are no longer confined to the boundaries set by states, which would explain the EU's position as a prominent political actor (Gilpin, 2001, p. 136).

Nevertheless, Gilpin defines the EU as a product of economic regionalism, which is the “*cooperative efforts of individual states to promote both their national and their collective economic and political objectives.*” (Gilpin, 2001, p. 11). Economic regionalism does enhance autonomy and bargaining positions amongst the MS, but I would argue that the EU should be assigned more agency than reflected by the concept of economic regionalism. Overall, the theory provides a suitable framework for understanding and analysing the case. But, if the theory was to be updated once more, it could be useful to raise the question of who the dominant actors of the international system are.

5.2 The paper’s positioning in relation to existing literature

The literature review discussed the works; *Energy Union, Europe’s New Liberal Mercantilism?*, and *The EU Energy Union Transition in a Geopoliticizing World*. Common for them both is that they describe an overall approach in the EU to protect its own economy against rivalling countries through economic power. The energy sector is particularly intertwined in these tendencies, as the use of economic power has materialised throughout energy policies.

The first text coined this tendency as *liberal mercantilism*; Whilst the EU still subscribed to a liberal market-centred approach with the use of regulatory power, it seemed inclined to promote regulation to advance its own powers at the expense of others (Andersen et al., 2017, pp. 9–8). The concept describes a grey area between neutral regulatory power and the politically motivated selective use of economic power. The grey area is described as “*selective applications of regulatory tools directed at foreign actors that are identified as a source of a threat*” ((Andersen et al., 2017, pp. 9–8). The grey area was to an extent shaped by divergence between the states that wanted a mercantilist approach and those that sought a liberal approach (Andersen et al., 2017, pp. 5–15).

There are several similarities between the case in this text and this thesis. The most conspicuous correlation being aggression from Russia prompts the EU to adopt measures that go beyond the usual regulatory power. Some of the examples of selective economic power that the EU has utilised in relation to recent Russian aggression is, joint gas purchases from third suppliers, sanctions of energy sources, people and businesses, and financial support for strategic net-zero technologies to diversify supply (Andersen et al., 2017, p. 6). The support using economic tools against Russia has considerable support today compared to 2014 (Russia’s annexation of Crimea). The EU heads of state and government decided openly just a

month after the invasion of Ukraine, that the EU would try to be independent of Russian energy sources by 2027 (Overvad, 2022a). However, the biggest difference is the role of renewable energy, which did not have the same strategic character back in 2015 when the strategy for a *European Energy Union* was published, and the addition of competitive considerations integrated in energy politics today.

The second article introduces the concept of geopoliticization as the “missing link” between politicisation and securitization (Herranz-Surralles, 2024, p. 22). Herranz-Surralles recognises the same aspects of liberal mercantilism in energy policies as Andersen et. al., and attributes them to a changing world with a higher degree of geopoliticization. Within the context of geopoliticization, developments in trade, investments and the use of economic power are defined as ‘geoeconomics’; “*the intersection of economics and finance with global political and security considerations*” (Herranz-Surralles, 2024, p. 22). Any progress towards the renewable energy transition should be regarded in terms of relative power. (Herranz-Surralles, 2024, p. 22). It is interesting to compare this text with the findings in this paper, as they deal with the exact same case. Herranz-Surralles has an extensive focus on security considerations in international affairs. In her view, the developments within renewable energy are a direct attempt to gain relative power over Russia, making her views align with the theory of GPE used in this paper. In Gilpin's interpretation, states aren't just thinking of economic independence, but also their relative gains from economic exchanges (Gilpin, 2001, pp. 78-80). For example, Herranz-Surralles uses the Green Deal Industrial plan as an example of a geoeconomic policy instrument (Herranz-Surralles, 2024, p. 22). This paper has analysed the Net-Zero Industry Act, which is a part of the former mentioned plan, and concluded that the Net-Zero Industry Act could be measured by the theory derived indicators: ‘security’, ‘economic autonomy’, and ‘technological leadership’.

Chapter 6: Conclusion

The following section aims to collect the thesis' finding with the purpose of drawing a conclusion based on the problem formulation:

How has the role of renewable energy developed in the EU during and after the energy crisis in 2022?

The energy crisis and Russia's war in Ukraine at the start of 2022 highlighted great vulnerabilities in the EU's market systems and dependencies on energy imports. This started a development of new measures from the EU, with the intention to stop all energy imports from Russia and increase security of supply by upscaling production of renewable energy in the EU. But simultaneously, renewable energy was becoming the centre of an agenda to gain competitive abilities within the field of net-zero technologies, showing that the role of energy was becoming more significant overall.

This paper adds to the existing literature by incorporating considerations regarding competitiveness and subsequently the need for technological leadership. The existing literature utilised the geopolitical tensions with Russia as a framework to understand the underlying context of their findings. This paper acknowledges the great impact that Russia's invasion of Ukraine and weaponization of gas prices has had on the development of renewable energy policies. However, when looking into the geopolitical context, one must also consider the pressure to compete with the USA and China regarding the development of strategic technologies that can contribute to security of supply and less interdependencies.

The document analysis examined three EU-documents. The RePowerEU plan was a direct response to Russia's invasion of Ukraine and contains the plan to phase out Russian fossil fuels. The Net-Zero Industry Act followed the RePowerEU plan with measures to facilitate the goals set in the latter. But through this act it also became clear that the scale up of renewable energy serves a purpose to increase competitiveness against the USA and China. The European Economic Security Strategy incorporates all the economic, security, competitive and geopolitical concerns that have materialised in the years during and after the energy crisis. The theory of GPE describes several things that can indicate the interests and motivations of the state (EU) when formulating market policies. All indicators, *security*, *economic autonomy*, *power optimisation*, and *technological leadership*, have been detected through the document analysis. This paper therefore concludes that that the role of renewable energy is to facilitate

the EU's political and strategic objectives toward competitiveness, security and economic autonomy following the energy crisis.

The semi-structured interviews show that the energy industry has picked up on the same tendencies reflected in EU documents. Respondents especially emphasised the need for competitiveness of the EU's net-zero industry. The way to achieve this would be through EU policies that strengthen the market and the industry's business model, but respondents criticised existing policies and claims there are many challenges that have not yet been accommodated, like insufficient infrastructure and lack of funding. Even though the EU and the energy sector have different theory-derived indicators as drivers of motivation in interactions between state and market, they largely work toward the same goals regarding renewable energy. The interviews confirm that the role of renewable energy has evolved from being a means to achieve net-zero, to having a broader function regarding competition, economic autonomy, self-sufficiency and security against hostile actors.

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