Conceptualising European Strategic Autonomy in Energy and its Compatibility with French and German Energy Strategies

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Contents

1. Introduction

In recent years, European Strategic Autonomy (ESA) has increasingly appeared in EU policy documents (European Council, 2019; Council of the EU, 2021). ESA is an offshoot of Strategic Autonomy (SA), a concept that the late General de Gaulle created in the 1960s, which entailed plans and actions to enhance France's military autonomy (van den Abeele, 2021). In 1998, the term was discussed again during the Saint-Malo summit between the UK and France regarding European defence capabilities (Howorth, 2019). In the following years, the topic would slowly fade into the background of political debates. However, the concept became relevant again with global political developments such as Brexit and Trumpism. The term was briefly mentioned in the 2016 EU Global Strategy, and in 2017, president Macron truly revived the concept and called for the EU to develop its 'capabilities' in defence and other policy areas (van den Abeele, 2021). The speech seemed to resonate with member-state leaders, as it was included in the EU's 2019-2024 Strategic Agenda (European Council, 2019). In 2022, the Ukraine invasion and the effect of Russia's energy warfare have shown how critical and salient this topic is.

However, most EU policy documents are rather vague about the policy areas and issues that ESA applies to and, if applicable, how this should be achieved. Similarly, most of the literature focuses on ESA as a military concept (Fiott, 2018; Jäärvenpää, Major & Sakkov, 2019; Lippert, von Ondarza & Perthes, 2019). Despite this, some recent literature from authors and think-tanks have called for and conceptualised the applicability of ESA to energy policies, but this is significantly less extensive than the literature on ESA as a military concept (Anghel, Immenkamp, Lazarou, Saulnier & Wilson, 2020; Akbari & Moazen, 2019; Ryon, 2020). Therefore, this thesis aims to contribute to the literature by analysing two core themes: ESA for energy policies and the post-war development of French and German strategic energy cultures. These themes are critical components of this thesis' central research question:

'How and why do French and German strategic energy cultures differ, and to what extent do they inhibit or enable the creation of ESA in the energy sector?'

The thesis begins with a literature review, establishing the various definitions of ESA. It will analyse some EU policy documents and how the academic literature defines the various aspects of the

concept. It will then look at the available literature on ESA and energy and establish several core themes, challenges and criteria that must be addressed to achieve ESA in the energy sector. The next chapter explains the methodology of this study and its potential limitations. The chapter after that is a comparative case study of French and German post-war strategic energy cultures. It will analyse their development from the 1950s until the invasion of Ukraine and explain why certain energy sources took precedence over others and how this influenced present-day energy security. The comparative aspect is then further analysed in the results chapter. Subsequently, the results section will explain whether or not France's or Germany's strategic energy culture best meets the ESA energy criteria established in the literature review.

2. Literature review

2.1 Strategic Autonomy (SA)

According to the literature, the terms strategic autonomy (SA) and European Strategic Autonomy have been researched and debated for quite some time. The terms, particularly SA, have been used for decades in different ways and contexts. Generally, there is significant overlap in the literature regarding said events and contexts, but there are also some differences. By examining the literature, it appears that there are roughly three different occasions or contexts where the term was used initially.

For example, van den Abeele (2021) appears to be the only author that mentions the late General de Gaulle and his presidency from 1958 until 1969, during which de Gaulle defined strategic objectives that would supposedly lead to strategic autonomy for France, one of them being the freedom of assessment, meaning that France would not be forced to participate in military conflicts by default due to, for example, military alliances. Instead, France would retain the ability to act autonomously in areas of defence if it so desires (Ministère des Armées, 1994; van den Abeele, 2021). Another large group of authors, including van den Abeele (2021), refers to the Franco-British summit of Saint-Malo in 1998, where French President Jacques Chirac and UK prime minister Tony Blair met to discuss advancing European security and defence policy. During the conference, member-state leaders discussed the need to build up and strengthen EU military capabilities to act efficiently in situations and conflicts where the broader NATO alliance was not involved (Fiott, 2018; Howorth, 2020; Mauro, 2018; van den Abeele, 2021).

Additionally, academics consider the 2003 invasion of Iraq as another important event that helped shape the concept of SA. For example, van den Abeele (2021) argues that during the invasion, the trans-Atlantic link between the EU and the US was weakened, and the EU, or to be more specific, a coalition of member-states against the war led by France and Germany, aspired to assert its independence on the international stage better (van den Abeele, 2021). Similarly, Simón (2013) concurs with van den Abeele (2021) but places a more significant emphasis on the Iraq war and its effect on French strategic autonomy in general and, to a lesser extent, that of the EU. The author

noticed that the French grand strategy had changed to increase cooperation with its European neighbours in response to the US invasion of Iraq, which it did not consider to be in its interest.

However, this does not mean that France abandoned its commitment to NATO; instead, it aimed to develop its relationship with NATO in conjunction with its European peers (Simón, 2013). In addition to this, more than a decade before Símon's (2013) work, Forsberg (2005) noticed a similar change in German foreign policy after the advent of the invasion of Iraq. A critical difference between Símon (2013) and Forsberg (2005) is, however, that Forsberg (2005) does not explicitly use the term SA, whereas Simon (2013) does.

Nevertheless, Forsberg (2005) described German opposition to the Iraq war as a renewed German assertiveness that could not be ascribed to anti-Americanism or the pacifistic nature of German society (Isernia, 2006; Larres, 2003). Regarding this new assertiveness, Forsberg (2005) states, "In questions of war and peace, it means neither a consolidation of pacifism nor a new militarisation, but rather the ability to pick and choose those wars that it regards as necessary and justified in a manner that is compatible with the notion of a 'civilian power'" (Forsberg, 2005, p. 215). This entails that Germany does not just want to part of the West under absolute American hegemony but to define what the West is. Still, like France, German assertiveness did not entail abandoning its commitment to NATO.

2.2. The beginning of European Strategic Autonomy (ESA)

As explained in the previous section, the literature links SA exclusively to individual member-states, like France and Germany or intergovernmental settings like the Saint-Malo summit. Tocci (2021) expands on the work of the previous authors and states that the literature declares 2013 as the year that SA, a predominantly intergovernmental concept, changed into ESA. Tocci (2021) explains that this is because 2013 was the first year that an EU institution, the European Council, adopted the term in one of its official policy documents, making it a truly EU concept.

Furthermore, ample literature explains why the ESA gradually became a salient topic, and there appears to be a significant overlap with events and developments related to SA discussed in the previous section. For instance, Tocci (2021), like van den Abeele (2021) and Simón (2013), acknowledges the invasion of Iraq as the catalyst for a renewed interest in SA, at least for France and

Germany. Also, like Forsberg (2005), Tocci (2021) notes the renewed German assertiveness and stresses that this is a relatively unique phenomenon because, for decades, the EU and its previous iterations had existed in the rules-based, liberal international order, in which it enjoyed military protection from the United States. Tocci (2021) states, "Under the umbrella of US hegemony, Europeans at times complained or disagreed with Washington, but never seriously contemplated acquiring the capabilities, the decision-making structures and the strategic culture to protect themselves autonomously" (Tocci, 2021, p. 10).

However, Tocci (2021) expands on the arguments of van den Abeele (2021) and Símon (2013) by referring to more recent developments. For instance, with Donald Trump's presidency and the Brexit referendum, the EU's internal cohesion and military security came under threat. Like Simón's (2013) argument about the Iraq war, Trump strained the trans-Atlantic relationship. Moreover, the unipolar, liberal world order led by the United States was increasingly challenged by Russia and China, with the former maintaining an increasingly disruptive and hostile foreign policy, the invasion of Ukraine is a case in point, and the latter being able to challenge the US economically. At the same time, both countries have often displayed behaviour incompatible with the liberal rules-based order that has existed since the end of the Cold War (Tocci, 2021). Thus, the EU realised it had to develop its own capacities to thrive in the increasingly multipolar world. As a result of this new geopolitical reality, ESA has been making its way into other policy areas such as climate, energy, digital and migration (Tocci, 2021).

2.3 Defining European Strategic Autonomy (ESA)

Still, how can one accurately explain the concept of ESA? There is a large variety of literature and policy documents that could provide an answer to this question. Most policy documents from the EU are somewhat vague and fail to provide an accurate definition of the concept. For instance, the Strategic Agenda 2019-2024 calls for the EU to 'increase its capacity to act autonomously to safeguard its interests, uphold its values and way of life, and help shape the global future' (European Council, 2019). While this statement sheds light on the motivation of the EU to enhance its capacity and autonomy, it gives the reader almost no insight as to what capacity and autonomy entail. Contrarily, an issue paper from the Council of the EU from 2021 provides the reader with more insight. However, it defines the concept by what it is not rather than what it is. For instance, it is not

about autarky; it is not limited to defence; it is not a rejection of NATO (Council of the European Union, 2021). Due to this 'negative definitional approach', the concept, at least in EU policy documents, remains an intrinsically ambiguous concept (Gallie, 1956).

In contrast to the policy documents, however, the literature does attempt to solve the definitional issues of strategic autonomy. Logically, SA can be divided into two words, 'strategic' and 'autonomy'. Therefore, the literature can be divided into roughly two main categories: One category focuses on the word autonomy, whereas other academics focus on the strategic part of the concept. Grevi (2019), for example, concludes that in the context of the EU, autonomy exists on a sliding scale. The level of autonomy depends, first and foremost, on which policy area it is applied. Complete autarky or autonomy is neither always possible nor desirable. In general, autonomy refers to the desire and capabilities of the EU to become more self-reliant to protect its interests and values (Grevi, 2019, p. 11).

Furthermore, for the second category, the literature provides roughly three definitions for the word 'strategic' in SA. This category can be further divided into three sub-categories or definitions of the word strategic. Firstly, with the earliest conceptions of ESA, the word 'strategic' was essentially conflated with the word 'military'. In that regard, it would entail the ability of the EU to "use military force autonomously" (Brustlein, 2018). In light of this, Anghel et al. (2020) give a second definition which expands the definition of Brustlein (2018) by stating that strategic autonomy is primarily about "means and tools to reduce external dependencies in areas deemed strategic and where dependencies could compromise autonomy, whilst continuing to cooperate with partners in a multilateral setting" (Anghel et al., 2020, p.2). This definition from Anghel et al. (2020) includes, but does not exclusively entail, the military definition of strategic, as Brustlein (2018) proposed. This is, in a sense, not too different from Grevi's (2019) definition of autonomy, which emphasises the importance off self-reliance.

Additionally, Järvenpää et al. (2019) provide a third definition, which, as Anghel et al. (2020) stated, entails multiple policy areas but includes a more proactive element for the EU. The authors conceptualise it as follows: "the ability of European states to set their own priorities and make their own decisions in matters of foreign policy, security and defence, and have the means to implement these decisions" (Jäärvenpää et al., 2019, p.4). In this case, the word 'means' could refer to the

institutional capacity of the EU to make effective decisions. For instance, Anghel et al. (2020) remark that QMV could be extended to the foreign policy domain to speed up the EU's decision-making process in foreign affairs. Tocci (2021) describes this neatly, "To live by its laws, rules, norms and values, the European Union, while being prepared to act alone, need not" (Tocci, 2021, p. 9). Again, this comes down to reducing external dependencies.

2.4 European Strategic Autonomy (ESA) and Defence

First of all, considering the history of the concept, it is perhaps unsurprising that the vast majority of the literature on ESA focuses on the military aspect of the concept. It is, without a doubt, inextricably linked with European defence policy (Fiott, 2018; Forsberg, 2005; Howorth, 2019; Mauro, 2018; van den Abeele, 2021). When analysing the work of authors like Järvenpää et al. (2019) and Fiott (2018), there is some overlap in how the authors conceptualise ESA in defence policy. Primarily, the authors conceive of ESA as the ability of the EU to conduct military operations in its territories and immediate vicinity. Alternatively, as Tocci (2019) states, it is "the ability to act, preferably with others, beginning with NATO and the US, but when necessary, also alone if Europe's allies and partners do not wish or may not be able to help". In order to achieve this goal, Järvenpää et al. (2019) & Fiott (2018) argue for developing a robust EU military-industrial sector to withstand changing relationships with the United States. Examples are the European Defence Fund (EDF) and Permanent Structured Cooperation (PESCO).

On the other hand, Lippert et al. (2019) have a different stance on this matter. The authors argue that complete ESA in defence is only possible in fifteen to twenty years and that this would require that member-states relinquish part of their sovereignty. Contrary to the authors above, Lippert et al. (2019) claim that operational and industrial autonomy is infeasible within current EU structures due to a lack of enthusiasm for the Common Security and Defence Policy (CSDP) and projects like PESCO and the EDF will still require close coordination with NATO. Therefore, the authors argue that the best course of action would be to develop a European pillar in NATO (Lippert et al., 2019)

Nevertheless, while Howorth (2019) agrees with Lippert et al. (2019) that dependence on NATO is incompatible with achieving full autonomy, the author appears to fundamentally disagree with the idea of a European pillar in NATO when it comes to ESA. The author argues that European

dependence on the United States was never the alliance's goal and that the true definition of ESA is a European Union capable of taking care of its collective defence. Howorth (2019) states that "This will be managed by the EU institutional architecture we are now all so familiar with: EEAS, PSC, EUMS, EUMC, EDA and other agencies of the EU's alphabet soup" (Howorth, 2019, p. 4). What this citation entails and sets Howorth (2019) apart from the other authors is the belief that this version of ESA should be established outside of NATO. By no means does this mean that member-states will have to leave NATO, but it does mean that the institutions mentioned above will have to be able to operate without NATO support or supervision when necessary (Howorth, 2019). However, countries like the Baltic member-states and countries with a robust trans-Atlantic relationship, like the Netherlands, appear to be wary of the concept of strategic autonomy as it is perceived as jeopardising the EU's relationship with the US and NATO (Libek, 2019).

Lastly, despite the convincing emphasis on defence, some authors, like Fiott (2018) and Lippert, Ondarza & Perthes (2019), do branch out a bit from the defence realm, "Our understanding of strategic autonomy thus encompasses the entire spectrum of foreign policy and security, and not just the dimension of defence" (Lippert et al., 2019, p1). According to Fiott (2018), such a description would include other policy fields, such as trade and energy. The following sections will provide a more comprehensive look at ESA in the energy sector.

2.5 European Strategic Autonomy (ESA) and Energy

While the literature about ESA in policy fields other than defence and security is relatively scarce, some authors, like Fiott (2018), Ryon (2020), van den Abeele (2021) and Criekemans (2021) have, to varying degrees, mentioned that ESA could apply to policy areas like energy. The EU also acknowledged this in the 2016 Global Strategy document, where energy was classified as a sector 'in which the EU should become strategically autonomous' (Ryon, 2020, p. 241). However, Ryon (2020) remarks that the literature on ESA in energy appears to be significantly less comprehensive than on the defence aspect of ESA. This is also noticed by Criekemans (2021), who states that ESA debates are primarily focused on developing the military capacity of the EU, even though the most significant challenges that Europe will face in the future will be in the energy field. "Failures to incorporate the energy domain in such a strategy could undermine Europe's geo-economic and geopolitical position in the world" (Criekemans, 2021, p. 40).

According to Ryon (2020), this is because, in the energy field, it is not so much about autonomy as it is about the diversification of suppliers. After all, "we are heavily dependent on energy imports, we cannot say that autonomy is a goal in itself" (Ryon, 2020, p. 241) and that "the Energy Union strategy is rather to ensure the security of supply through the diversification of energy sources" (Ryon, 2020, p. 241). Contrarily, Ryon (2020) states that this does not exclude ESA from the energy sector because the reason for energy diversification is to be less susceptible to external interferences that could jeopardise energy security and internal stability. "Indeed, being able to switch energy providers to stop the potential influence of a dominant energy supplier is similar to the main goal of European strategic autonomy: to have freedom of political choice, and action" (Ryon, 2020, p. 241). In that case, one could argue that any EU energy policies and strategies that make it less dependent and susceptible to external interference and shocks to the system are working to enhance ESA (Anghel et al., 2020)

Using the definition provided by Ryon (2020) and Anghel et al. (2020), one could argue that EU policies have already sought to create ESA for many years. For instance, the gas disruptions in Ukraine in 2006 and 2009 exposed the vulnerability of EU gas supplies and sparked debate within the EU. In 2006, this led to a proposal by Poland for the 'European Energy Security Treaty'. Like NATO, it involved the concept of mutual support. In this case, if a country suffered from significant supply disruptions and its energy supplies reached critical levels, other members would provide energy from their reserves. The Visegrad and Baltic countries supported the proposal but faced resistance from France and Germany (McGowan, 2011).

On a similar note, the annexation of Crimea in 2014 caused concern among member-states about energy supply reliability. Putin stated, "If we see that our Ukrainian partners, just like in 2008, begin removing gas without permission from the export pipeline system, we, just like in 2008, will consecutively reduce the stolen volume at the cost of supplies" (Neslen, 2014, p. 1). The conflict heavily influenced the European Energy Strategy of the same year. The policy document states: "Many countries are heavily reliant on a single supplier, including some that rely entirely on Russia for their natural gas. This dependence leaves them vulnerable to supply disruptions" (Kaplan, 2022, p. 7). This indicates that energy diversification as part of ESA, as opted by Ryon (2020), has at least been relevant since the mid-2000s (Kaplan, 2022; Ryon, 2020).

2.5.1 Russian Natural Gas

According to van den Abeele (2021), before the Ukraine invasion, the EU almost entirely depended on Russia for its natural gas. The prediction was that this dependence would likely increase, with the tensions revolving around the Nord Stream 2 pipeline being a prime example of this (van den Abeele, 2021). For instance, in 2019, the EU imported 87.7% of oil and 70.4% of natural gas, making the EU a net importer (van den Abeele, 2021). The author also calls Russia an 'inescapable geopolitical power' because, by 2025, the EU will have to import an additional 100 billion cubic metres of gas per year to fulfil its energy demands (van den Abeele, 2021, p. 13 Ryon (2020) concurs, 'Such asymmetric dependencies in such a strategic sector as energy create a potentially damaging situation for our European strategic autonomy, weakening our capacity to freely take political decisions and act on them' (Ryon, 2020, p. 241).

Despite this, Lippert et al. (2019) noted that the EU energy supply chain is relatively secure due to a high degree of member-state interconnectivity and a robust import infrastructure (Lippert, von Ondarza, & Perthes, 2019). However, says Ryon (2020), despite the excellent infrastructure, the EU still relied on a limited number of energy suppliers, which could seriously threaten EU energy security and undermine ESA (Ryon, 2020). In this regard, Lippert et al. (2019) seem to concur with Ryon (2020), as the authors stressed the need to diversify energy sources. At the same time, Lippert et al. (2019) state that this had to be carefully balanced with economic interests because natural gas is an essential and relatively clean energy source for the transitional period from fossil fuels to renewables. As such, natural gas is often a core component of member-state energy mixes (Criekemans, 2018; Lippert et al., 2019).

Furthermore, even in 2014, the European Commission, like Ryon (2020) & Lippert et al. (2019), acknowledged the resilience of the European gas system in a report. However, even in the most optimistic scenario, where member-states cooperated during energy shortages, countries like Finland, Serbia and North Macedonia would still lack 60% of the required gas, and households could experience power outages (European Commission, 2014). In 2022, said predictions have become a reality, with Russia drastically reducing or even stopping gas supplies to Europe entirely while the war in Ukraine lasts. As a result, many European countries struggle to maintain enough gas reserves to make it through the winter (Chestney, 2022).

2.5.2 Nord Stream 2

Additionally, only one paper specifically uses the term ESA and how it would have been affected by Nord Stream 2 (Akbari & Moazen, 2020). Since its announcement, Nord Stream 2 has been one of the most controversial energy infrastructure projects. In the past, proponents mentioned the EU's growing need for natural gas, whereas opponents saw it as a geopolitical extortion tool for the Kremlin (EPRS, 2021). However, recently, said debates have become obsolete. Since the invasion of Ukraine, the EU has decided to phase out Russian gas gradually until 2027, and Nord Stream 2's sabotage has left the pipeline defunct indefinitely (Fisher, 2022; Plucinska, 2022).

Furthermore, Akbari & Moazen (2020) explain how Nord Stream 2 would have affected ESA in energy had it not been sabotaged. Firstly, Nord Stream 2 would have affected the free-market competition in the natural gas sector by overly relying on a single supplier. This would make many EU energy security susceptible to occurrences and developments in Russia. "NS2 will mark the beginning of a new era of external dependence yet unknown to the Western part of the continent" (Akbari & Moazen, 2020, p. 5). The reason for this is that had Nord Stream 2 become operational in conjunction with Nord Stream 1, approximately 81% of Russia's annual gas supply to Europe would pass through both pipelines. Russia could limit gas supply to Europe as a way of political or financial extortion, as it has done in the past to former Soviet Republics and is doing now to EU countries in the wake of the invasion of Ukraine. Secondly, even without the possibility of geopolitical powerplay, technical pipeline difficulties could seriously jeopardise EU energy security (Akbari & Moazen, 2020).

2.6 Strategic Culture

Another component of ESA that is frequently mentioned in the literature is strategic culture. According to van den Abeele (2021), president Macron was the first president to adopt the term strategic autonomy and bring it into mainstream political debate. During the president's Sorbonne speech, Macron stated, 'What Europe lacks most is a common strategic culture' (van den Abeele, 2021, p. 17). Interestingly, authors like Franke & Varma (2019) agree because they mention that, 'In any event, differences between European countries' strategic cultures are a major hurdle to ESA generally and, *a fortiori*, to the formation of a European army' (Franke & Varma, 2019, p. 23). Additionally, Ryon (2020) makes a similar conclusion, 'However, the economic consequences of the COVID-19 crisis and the inability of European member-states to clearly define in normative and political terms

what European strategic interests are will certainly dampen the development of strategic autonomy' (Ryon, 2020, p. 243).

By analysing the literature, one can see that the concept has been debated since the 1980s. Generally, most literature studies the concept as part of military doctrine and strategy. However, within this category, there are some differences. For instance, Gray (1984) focuses mainly on how national cultures influence military doctrine, whereas scholars like Johnston (1994) examine the concept through the lens of nuclear doctrines (Gray, 1984; Johnston, 1994). Authors like Klein (2007) emphasise the role of the strategist and provide guidelines for strategic military choices (Klein, 2007). Perhaps more relevant to this particular discipline, authors like Galehdar (2022) and Biava, Drent & Herd (2019) focus specifically on European strategic cultures, which analyses the concept through a Euro-centric lens. The researchers explain European military doctrines, identify common European problems, and determine how best to address these collectively (Biava et al., 2019; Galehdar, 2022; Zandee & Kruijver, 2019).

2.6.1 Strategic Energy Culture

Furthermore, the authors agree that strategic culture has no clear definition. However, most importantly, the authors provide a different perspective on the concept that is not entirely entrenched in military doctrine. For instance, Ghalehdar (2022) states: 'strategic cultures are the product of an amalgam of historically rooted, deep-seated convictions about the purpose and means of a group's external actions, mostly in the formative years of that group' (Ghalehdar, 2022). In this case, 'external actions' do not solely refer to military activity. Biava et al. (2019) have a similar idea in which strategic culture is, essentially, decision-making influenced by various factors like norms, ideas and historical events to achieve a determined objective. Again, this is not exclusively a military objective (Biava, Drent, & Herd, 2011). Also, Zandee & Kruijver (2019) state: 'It becomes clear that developing a shared strategic culture is not primarily and only a military affair. Strategic culture reflects broader historical, societal and cultural characteristics of a country' (Zandee & Kruijver, 2019, p. 1). Therefore, like strategic autonomy, one could argue that strategic culture also applies to policy areas such as energy, and one could use historical events to explain the development of a country's strategic energy culture, like the research conducted by Hadfield (2016) on EU-Russia energy relations (Hadfield, 2016).

2.7 Conclusions

Based on the literature review, one could determine that it is and has always been a primarily military concept. The literature on ESA and defence policies is extensive, and this chapter has provided plenty of examples of how authors conceptualise ESA and defence and which criteria they set for achieving ESA for this policy area. However, there is a clear gap in the literature. While the EC and authors who write about ESA as a military concept briefly mention that the concept could also apply to other policy areas like energy, neither provide concrete criteria to achieve this (Järvenpää et al., 2019). Specifically, only four authors have written specifically about the term ESA in an energy-related context (Akbari & Moazen; Anghel et al., 2020; Criekemans, 2019; Ryon, 2020). The lack of literature on ESA in the energy domain allows for a relatively broad interpretation of how it should be applied to the policy area.

Two interesting things came to light. Firstly, any energy-related policies from the EU or member-states that reduce the dependency on a single supplier, or the susceptibility of energy security to disruptions caused by external interferences, contribute to the creation of ESA in the energy domain (Anghel et al., 2020; Ryon, 2020). From this broad definition, more specific challenges/criteria for ESA and energy policies could be distilled. These are the EU's dependency on Russian natural gas and the Nord Stream pipelines. (Akbari & Moazen; Anghel et al., 2020; Criekemans, 2019; Ryon, 2020). Secondly, the common thread between ESA in Defence and ESA in Energy is that, at their core, both versions seek to reduce external dependencies and increase self-reliance. For defence, this could entail EU member-states developing their military capabilities so that they are no longer dependent on other NATO allies, like the US and, to a lesser extent, the UK, for their collective defence. Similarly, for Energy, this could mean reducing EU and member-state dependence on Russia as the primary supplier of energy sources and increasing the output of domestic energy sources (Anghel et al., 2020; Criekemans, 2019; Ryon, 2020).

3. Methodology

3.1 Research Methods

This thesis analyses the core characteristics of French and German strategic energy cultures, how they came to be and whether or not they are compatible with our present-day conception of ESA in the energy sector. The thesis is wholly based on qualitative research and will employ both primary and secondary sources. For instance, to explain the many facets of ESA, the literature review contains official EU policy documents, mainly from the Commission or parliamentary research groups, and literature from scholars and think tanks. Moreover, this thesis utilises academic literature describing how the French and German governments constructed their energy policies and the reasoning behind those policy choices.

Additionally, the thesis will use empirical research methods to come to a conclusive answer to the central research question, e.g. a comparative framework, which is particularly common in the European Studies discipline (Haverland & van der Veer, 2017). A comparative study carefully lists the differences and similarities between two subjects with the intent of learning something about the cases being compared (Bukhari, 2011). The two cases being compared are French and German strategic energy cultures. The thesis focuses on France and Germany because they are the two largest member-states and key drivers of EU policy (Gorin, 2022). Despite this, both countries have widely different energy systems (Martin, 2022). Therefore, the thesis will compare French and German strategic energy cultures and explain why the respective governments favoured a particular direction for energy security. Comparing two cases and finding and explaining how they differ is called a differentiating comparative analysis (Pickvance, 2001).

The process will examine and analyse the role of four energy sources: coal, natural gas, renewables, and nuclear energy, and to what extent they have affected French and German strategic energy cultures. As such, the case studies will trace the development of each country's strategic energy culture from the 1950s until the invasion of Ukraine. Also, the case studies will pay particular attention to historical contexts and developments, as these can have long-lasting effects on a country's strategic culture (Zandee & Kruiver, 2019). At the end of the case studies, it will become clear what

the current French and German strategic energy cultures are and by which historical contextualities they have been shaped. The comparative element will be covered in the results chapter.

After establishing how and why French and German strategic energy cultures differ, the researcher will compare them to another variable or frame of reference, which can be a theory, problem or question (Walk, 1998). In this thesis, that frame of reference is ESA, specifically ESA in the energy sector. The literature review has already established the primary issues that must be addressed to achieve ESA in the energy field: the level of dependence on a single supplier of energy and the susceptibility of the energy mix to disruptions caused by external interferences. By examining the information from the comparative analysis of French and German strategic energy cultures and determining how well they address these issues, this thesis can determine whether or not, generally, French and German strategic energy cultures have inhibited or enabled ESA in the European energy sector.

3.2 Limitations

Nevertheless, this approach has some limitations because, as mentioned in the literature review, literature on ESA for the energy sector is relatively scarce. The concept constantly evolves and is not as detailed as ESA in the military sector. Another limitation is that the concept did not yet exist for most of the period on which the case studies focus. Therefore, this thesis does not pretend that the French and German governments consciously worked toward that goal when devising energy policies. Instead, this thesis aims to explain the consequences these choices had for the respective strategic energy cultures in terms of compatibility with our current conceptions of ESA in the energy sector. Still, even though the specific combination of the term ESA and energy are recent inventions, one criterion, like reducing dependency on a single supplier, was already a component of the 2014 Energy Strategy. Thus, unless member-states completely ignored the Energy Strategy, expecting at least some convergence with ESA energy criteria is not unreasonable.

4. Case Studies

4.1. Germany

4.1.1 Coal and Natural Gas

In the 1950s, coal comprised 70% of West German energy production. From 1945 to 1958, West German coal production increased significantly. West Germany had sizeable coal deposits in the Ruhr, and as the economy grew, so did the coal demand from the commercial sector. In turn, the excellent state of the economy resulted in a higher living standard, making coal the primary method of heating in West German households. Due to innovations in coal mining and production facilities combined with specific worker recruitment policies, coal production between 1947 and 1957 almost doubled. However, from 1955 onward, the dominance of coal was slowly but steadily challenged by crude oil. Oil-producing countries produced more oil than the market demand, which resulted in a price dump. Fears from West German coal companies were initially assuaged by the closure of the Suez Canal in 1956, which caused an increase in oil prices. The West German industry commissioned additional oil freighters in case the Suez Crisis would be a long-term issue. However, the crisis was resolved in a week, and the extra capacity of the freighters dropped prices even lower. Luckily, the mining trade union recognised the problem early and was able to act quickly and implemented measures that would soften the blow for the coal industry. Thanks to the union, the excellent state of the West German economy, and technological advancements in the coal sector, the industry remained fairly stable until the mid-1960s (Farrenkopf, 2022).

Unfortunately, this changed in 1966 when West Germany experienced an economic recession. Demand for coal fell sharply, and with it, the coal sector's output. Consequently, between 1965 and 1968, approximately 35% of coal mines were closed, causing 100,000 layoffs. In 1968, due to the severity of the situation, the individual coal companies were forced to collectivise in the form of a single company called 'Ruhrkole AG'. Its primary goals were to gradually consolidate coal production and market demand and ensure coal's competitiveness in the energy market. However, this did not prove easy because coal was more expensive than other energy sources, even during the Oil Crises in the 1970s (Farrenkopf, 2022). At the same time, in the 1960s, countries with fewer coal deposits, such as France, started focusing on discovering and developing natural gas fields to alleviate their import

dependence on coal. Gas from these domestic wells became so popular that producers failed to meet consumer demand (Högselius, 2022).

Therefore, suppliers started looking for international sources. In the 1960s, the Soviet Union announced the discovery of an immense gas well in Siberia, and by the 1970s, the Soviet Union was one of the largest natural gas suppliers to Western Europe (Högselius, 2022). During the Oil Crisis of 1973, West Germany assuaged the impact of oil shortages by paying exorbitant prices (Whitney, 1974). Therefore, Soviet gas became an economically attractive alternative to crude oil, and the increasing share of natural gas in the West German energy mix put even more pressure on the coal sector (Beltran, 2022; Höseglius, 2013). Thus, despite subsidies and other government measures, the share of coal in the German energy mix has gradually declined, and in 2021, only 21% of German energy production still came from coal (Appunn, Haas, & Wettengel, 2022; Höseglius, 2022).

Eventually, natural gas would gradually take the place of goal as the primary energy source (Appunn, Haas & Wettengel, 2022). Since the 1970s, natural gas has played a prominent role in Russo-German relations (Westphals, 2008). Until the invasion of Ukraine, Germany was the largest market for Russian gas, which made up 55% of Germany's annual gas needs. (Chivvis & Rid, 2009; DW, 2022; WEF, 2022). Germany's profound dependence on Russian gas is the result of a process lasting several decades, which to some, can be attributed to Germany's 'willful blindness' to the potential dangers of such a dependency (Loss, 2022). It is the culmination of a process that started in the late 1960s with chancellor Willy Brandt's Ostpolitik, which sought to normalise relations with the Soviet Union through economic cooperation. An important economic project of Ostpolitik was the 'Erdgasröhrengeschäft', or natural gas pipeline deal with the Soviet Union (Westphals, 2008). Germany continued the project despite heavy criticism from the US. Therefore, Germany was somewhat of an outlier regarding relations with the Soviet Union (Chivvis & Rid, 2009).

Naturally, German foreign policy is heavily influenced by its atrocities during WWII, and the way it conducted its relations with Russia during the first fifteen years of the 21st century is no exception to this. Weighed down by its historical sins and aware of the successful model of economic cooperation of Ostpolitik, German leaders have been reluctant to assume 'hostile' positions toward Russia, favouring economic engagement instead (Westphals, 2008). Due to its past, Germany feels a

responsibility to help Russia modernise and develop: 'Germany (and its allies) can either help or hinder this process, but it cannot remain ambivalent or allow Russia to experiment with its own path' (Chivvis & Rid, 2009, p. 116), and 'isolating Russia would deprive the West of its few remaining economic levers over Russian policy and leave Europe and the United States with only cruder means of influencing Russian behaviour' (Chivvis & Rid, 2009, p. 118). Therefore, Russo-German relations were characterised by Germany's desire for atonement and economic cooperation to prevent Russia from befalling the same faith as Germany had during the 20th century (Chivvis & Rid, 2009; Westphals, 2008).

4.1.2 Renewables and Nuclear Energy

Germany opened its first NPP in 1960, but nuclear energy was a private-sector affair, so it received little government support. Thus, the construction of NPPs only took off during the economic boom of the 1960s, after which nuclear energy started to become more important to the German energy mix. In the 1970s, like natural gas, nuclear power became a more critical part of the German energy mix (Flegel, 2010). At the same time, public opposition started to grow due to concerns about the safety of the NPPs, and the protests managed to stop the construction of several NPPs. Smaller anti-nuclear parties banded together and formed the German Green Party in 1980. From this point, the anti-nuclear movement would find representation in the Green Party (Williarty, 2013).

Thus, when the SDP/Greens coalition came to power in 1998, it had two priorities: phase-out nuclear energy and increase the share of renewables in the German energy mix (von Hirschhausen, 2018). However, regarding its Russian policy, the new coalition maintained a similar approach as Brandt's Ostpolitik (van der Stroom, 2022). As such, in 2000, the coalition drafted the Renewable Energy Act (EEG). It improved the investment climate for renewables and introduced support rates and mechanisms for the more expensive renewable technologies such as solar, hydro and biogas that would last for twenty years. It recognised the potential of renewables and 'also intended to place renewables on equal footing with other energy sources and bring them into the mainstream of electricity generation' (von Hirschhausen, 2018, p. 32). Conventional energy producers also noticed the potential and extensively opposed the regulation. The fact that the share of renewables in power generation rose from 4.8% in 1998 to 16% in 2009 was a significant reason for this opposition (von Hirschhausen, 2018).

The energy utilities were right to fear renewables because it was mainly this rapid increase in the use of renewable energy that made phasing out nuclear energy possible in the first place (von Hirschhausen, 2018). The utilities were concerned because over 40% of their assets were invested in nuclear energy (Gammelin, 2005), which caused Schröder to host several roundtables with the most prominent German energy utilities (Westphals, 2008). The utilities argued that the reduction in nuclear energy would critically jeopardise Germany's energy security (von Hirschausen, 2018), and Schröder, who had strong ties to the energy sector, tried to ease away their concerns by facilitating a merger E.On and Ruhrgas, creating a large multinational energy company that would be competitive in the international market (Gammelin, 2005). The merger assuaged the concerns mentioned above about assets and energy security. E.On Ruhrgas instantly became the dominant energy company and imported roughly 60% of Germany's total gas consumption. It engaged in mutual investments with Gazprom, and both companies were so prominent in the German market that they essentially had a monopoly between producer and buyer (Westphals, 2008). Also, due to the enormous contribution of Russian gas to German energy security, Schröder developed a personal friendship with Putin, for which the chancellor received much criticism (Pieper, 2022). Schröder was often reluctant to criticise Putin, which many say is due to their close relationship (Szabo, 2015). The culmination of their friendship was the construction of Nord Stream 1 in 2006, which from Russia's point of view, ensured the further strengthening of the Russian-German energy dynamic (Westphals, 2008; Szabo, 2015). It would also provide Russia with another tool for political pressure by undercutting alternative gas supply routes (Adomeit, 2016)

Additionally, German energy strategies remained the same under subsequent coalitions. However, this changed in 2009, when a coalition of conservative parties (CDU/CSU) and liberal (FDP) came to power and reprioritised the role of nuclear energy in the German energy mix. The new coalition envisaged the creation of an Energy Concept 2050, which detailed a long-term European energy strategy in which nuclear power could play a prominent role (von Hirschhausen, 2018). Still, nuclear energy was a highly contested issue in the Energy Concept 2050 and discussions between the German government and nuclear energy suppliers delayed the concept's publication. Proponents of nuclear energy emphasised its role in supplying cheap and affordable energy and ensuring energy security (von Hirschhausen, 2018). A deal was eventually struck between the German government

and the utilities. 'The utilities were granted a lifetime extension for nuclear power plants by 12 years on average (older plants: 8 years, younger plants: 14 years); in return, they had to pay a tax on the uranium fuel used and provide some support for the development of renewable energies' (von Hirschhausen, 2018, p. 35). Unbeknownst to the public, however, both parties had concluded a side deal, which entailed that the utilities would enjoy a reduction in payments to the government and that their benefits would withstand and outlive subsequent changes in government. This side deal was eventually uncovered and publically addressed by environmental activist Tobias Muenchmeyer. The deal created a rift between the coalition, the opposition, and the wider public, greatly diminishing support for nuclear energy (von Hirschhausen, 2018).

In the end, the Fukushima incident of 2011 put the nail in the coffin of nuclear energy. A tsunami hit and flooded the reactor, cutting the electricity supply and resulting in a meltdown. The incident caused political consternation in Germany. The German government stated that if a meltdown could happen in a technologically advanced country like Japan, it could certainly happen in Germany. Therefore, the government initially shut down the seven oldest nuclear power plants for three months, although they have never been reopened (von Hirschhausen, 2018). Before this decision, a research committee had decided that 'nuclear energy was neither secure nor economical and should be phased out rapidly, and the path towards a renewables-based system could be accelerated' (von Hirschhausen, 2018, p. 38). In the summer of 2011, the German parliament passed the Law on Nuclear Energy (Atomgesetz), which ensured the phasing out of nuclear power plants by 2022. However, due to the energy crisis, two NPPs will remain active until April 2023. The law had broad political and public support and had put Germany on a solid path toward renewables (Moss & Gailing, 2016).

4.1.3 Renewables and Natural Gas

However, when the German government decided to phase out nuclear energy, experts were initially optimistic about the ability of renewables to compensate for the gap in energy output that the NPPs had left (Hager & Stefes, 2016). However, in 2014, NPPs generated 25% of Germany's required energy (Szabo, 2015). This significant share of nuclear in Germany's energy mix, combined with increasing pressure from sceptics concerned with rising energy costs due to the shortcomings of renewable energy technology, caused division in German society about the direction of the

Energiewende (Hager & Stefes, 2016). Simultaneously, Germany fulfilled a third of its energy requirements with natural gas imports from Russia: 'This relationship deepened in the wake of the Merkel decision to shut down Germany's nuclear capacity, as nuclear energy accounts for a quarter of German electricity' (Szabo, 2015, p. 70). The decision worried RWE, a major German utility, that, unlike E.On Ruhrgas, had avoided dependence on Gazprom before. However, after the decision, the company saw it necessary to fully engage with Gazprom to soften the blow of the nuclear phase-out, signing a memorandum of understanding that subsequently paved the way for the continued expansion of Gazprom into the German market (Szabo, 2015). Gazprom established joint ventures and acquired shares in German energy companies such as Wingas, VNG and Wintershall Erdgas Handelshaus. Due to these acquisitions, Gazprom controlled roughly 38% of the German gas market (Szabo, 2015).

Nevertheless, such a presence of Gazprom in the German gas market is not without risks. Gazprom is not just a multinational company. Instead, it serves the interests of the Russian state. In 2011, the European Commission ordered a raid on Gazprom offices in Germany and found that the company was conspiring to divide markets and, thus, inhibit the ability of European countries to diversify their suppliers. For example, it tried to form a cartel with Algerian gas companies and push the South Stream pipeline over the Nabucco pipeline, which the EU needed to reduce the dependency on Russian gas (Szabo, 2015). Gazprom also thwarted alternative suppliers in the Caspian Sea area by denying them access to its vast pipeline network, inhibiting the EU's ability to diversify (Westphals, 2008).

Therefore, in 2011, when the Merkel government announced the construction of Nord Stream 2, it faced much the same criticism as the Schröder government had (Dempsey, 2018). When Merkel's coalition came to power, it maintained a similar view on Russo-German relations as the previous German governments (Siddi, 2019). For instance, in Merkel's response to the criticism of her decision to build Nord Stream 2, Merkel clarified that 'Nord Stream 2 was a commercial endeavour and should not be undermined by politics' (Siddi, 2019, p. 551). Foreign minister Heiko Maas figuratively invoked the spirit of Willy Brandt and stated that Europe needed to develop a new, common Ostpolitik, of which Nord Stream 2 was a pivotal part. Even among German domestic political parties, support for the project was essentially unanimous, except for the Greens (Siddi, 2019). Again, the German

government believed economic interdependence with Russia would prevent it from engaging in disruptive foreign policy behaviour (Siddi, 2019).

Unfortunately, the recent invasion of Ukraine and potential Russian self-sabotage of Nord Stream 1 and 2 have proven this false (Plucinska, 2022). The culmination of decades of this particular German energy strategy has resulted in fossil fuels fulfilling 70% (natural gas 26%) of Germany's energy requirements, and, until the invasion of Ukraine, approximately 50% of its fossil fuel imports came from Russia (Bachman et al., 2022; Nakhle, 2022). Coal and oil imports from Russia are relatively easy to replace, but it is still highly reliant on and vulnerable to disruptions of gas deliveries from Russia (Bachmann et al., 2022). Renewables comprise 19% of the German energy mix, and these can temporarily generate sufficient energy for the public energy net, but natural gas is essential for the German industry (Energy Charts, 2022; Nakhle, 2022). With gas deliveries having stopped, Germany has to cut back at least 20% of its daily gas use, or risk facing a nationwide gas shortage and deindustrialisation (Murray, 2022; Treeck, 2022).

4.2 France

4.2.1 Coal and Nuclear Energy

Like West Germany, coal was the primary energy source for France. However, France had significantly fewer coal deposits than Germany. Therefore, the French coal industry was quantitively and qualitatively worse than its German counterpart. Even at peak production, 58 million tonnes, France still had to import an additional 21 million tonnes to meet its energy demands (Beltran, 2022). As such, France started exploring alternative energy sources, including nuclear energy. After the Second World War, the pride of the French people was severely crushed due to the defeat by the Germans and the subsequent occupation of France (Krige, 2006; Williarty, 2013, p. 294). The French, reminiscing about France's past, were reluctant to accept France's new position in the post-war geopolitical setting (Kelly, Fallaize, & Ridehalgh, 1995). In the years after the war, the possession and the ability to deploy nuclear weaponry became a core characteristic of a military superpower (Cho, 2013). Even during the war, French scientists cooperated with American and British scientists on the Manhattan project, which led to the creation of the first atomic bomb. However, while French scientists contributed significantly to the project, France was still considered subordinate to Britain, which enjoyed a special relationship with the US. This trend continued after the war, and much to

president de Gaulle's annoyance, France was often excluded from sharing military and nuclear information by the US and treated as a second-tier partner (Cho, 2013). When in 1945, de Gaulle went to meet President Truman to protest this exclusion of France, Truman dismissed de Gaulle's concerns and said, "The United States possessed a new weapon, the atomic bomb, which would defeat any aggressor" (Gardner, 1986, p. 184). Naturally, this alarmed de Gaulle. Therefore, de Gaulle, determined to reinstate France as a key global player, decided to launch a domestic nuclear programme (Gardner, 1986).

Since nuclear capabilities were synonymous with prestige and grandeur in the post-war geopolitical setting, French politicians were convinced that by developing a nuclear programme, France could leave its mark on the post-war development of the new world order. Consequently, many technologists became deeply involved in French politics: 'They offered up visions of a new technological France and claimed a central role in shaping this national identity' (Hecht, 2001, p. 21). As a result, the domestic nuclear programme was not just a tool for France to assume a more dominant position on the world stage but also an intrinsic characteristic of French identity itself, or as Hecht (2001) explains, 'France's nuclear reactors are contemporary chateaux, symbols of national glory equivalent in scale and style to the grandest historic monuments' (Hecht, 2001, p. 21). In 1945, de Gaulle created the Commissariat à l'énergie atomique (CEA) to 'research the practical applications of atomic energy' (Christensen, 1979, p. 345), which was only accountable to the president (Aldrich, 2008).

However, to make the nuclear programme a success, de Gaulle would first have to generate sufficient public support among French citizens. Therefore, in 1946, likely due to de Gaulle's meeting with Eisenhower, French radio stations transmitted a nuclear attack drill that was so realistic that it convinced the French public of the need for a domestic atomic programme to allow the French military to retaliate in case of an attack (Kelly, Jones, & Forbes, 1995). In 1948 and 1954, these efforts led to the conception of France's first experimental nuclear reactor and weapons programme, respectively (Boyle & Robinson, 1981, p. 301; Cho, 2013, p. 53). Additionally, in 1955, the French government created a commission called Production d'Électricité d'Origine Nucléaire (PEON), which coordinated activities and officials of the CEA and EDF, a nationalised utility company, which further

centralised nuclear authority to the state. Because the state kept any information about nuclear projects secret from the public, the expansion of the French nuclear project faced negligible public resistance (Aldrich, 2008). A year later, due to the Suez Crisis of 1956, France started extensively researching renewable energy technologies, which led to the creation of a tidal power plant in 1966 (Beltran, 2022).

In the meantime, the role of coal continued to diminish. Consequently, in 1960, the government announced the 'Jeanneney' plan, which was meant to gradually scale down the French coal sector. The plan faced heavy resistance from French miners, who could count on significant public support due to the heroic status of French miners during the reconstruction of post-war France. Thanks to the protests, the coal sector would stay alive for several more years. However, due to the rise of natural gas and oil, the future of the coal industry looked bleak (Högselius, 2022). France made natural gas deals with the Soviet Union and the Netherlands, and with the discovery of oil wells in Algeria, France gradually became an oil power, which could have alleviated European dependency on oil imports (Musso, 2017). Because of the development of the oil and gas sector and increasing energy demand due to economic growth (Taylor, Probert, Carmo, 1998), oil and gas eventually outcompeted the inefficient French coal industry. Therefore, in 1969, the government was again forced to announce the phase-out of coal (Beltran, 2022).

4.2.2 Renewables and Nuclear Energy

By 1970, France had surpassed other European countries regarding renewable energy technology. However, in 1973, the first Oil Crisis hit Europe, causing oil prices to rise (Taylor, Probert, & Carmo, 1998). The crisis exposed the vulnerabilities of Europe's energy supply chains (Aldrich, 2008). Unfortunately, in practice, renewables proved inadequate to address the subsequent energy shortage. Thus, France focused on increasing its nuclear energy production (Planete Energies, 2015). In 1970, it comprised only 4% of the energy mix. Despite that, it was far more efficient than renewables (Boyle & Robinson, 1981). Therefore, with guidance from PEON, France adopted a 'total nuclear strategy' (Aldrich, 2008, p. 155), and Prime Minister Pierre Messmer introduced the 'Messmer Plan', which envisioned the construction of 56 new NPPs between 1974 and 1989 (Le Gros, 2020). Geological surveys discovered sizeable sources of fissile materials in France and several of its former overseas territories, Gabon and Niger. Said reserves were relatively cost-effective to exploit, which

enabled the rapid expansion of the French nuclear programme in the subsequent decades (Boyle & Robinson, 1981).

Consequently, in the 1970s, France's nuclear project became too substantial to hide from the public, and France experienced a notable increase in civil opposition to nuclear energy (Aldrich, 2008). However, for several reasons, the opposition was largely ineffective in preventing the construction of NPPs. For instance, no mainstream political party wanted to champion the anti-nuclear movement, most likely due to their connections to the nuclear industry. Gaullist parties supported nuclear energy to enhance France's energy independence, whilst the Communists noted the advantages for workers (Williarty, 2013). Also, because authority over nuclear energy was centralised at the government level and a matter of national priority, the government brought to bear many coercive methods on protesters and expropriated land from unwilling landowners to build NPPs. Tensions continued to rise, and in 1977, 60,000 protesters gathered to protest the opening of a 'Superphoenix' reactor in Creys-Malville. The police cracked down on the crowd, resulting in the death of one protestor (Williarty, 2013).

Despite the protests, nuclear energy remained the primary component of the French energy mix for over 40 years, not even wavering after the Fukushima incident in 2011, as was the case for Germany (AN Center, 2012; Schneider, 2013). However, in 2012, Socialist president Hollande announced 'la transition energetique', or energy transition, in which France's total nuclear output would decrease to 50% of France's energy mix by 2025. Still, nuclear energy accounts for 78.8% of France's total energy mix. By shutting down NPPs, France would have to significantly increase the contribution of renewables to the energy mix (AN Center, 2012). As such, in 2014, the government announced the 'Energy Transition for Green Growth' bill that would increase the share of renewables from 15% to 32% by 2030, ensuring the continuation of France's energy independence (AN Center, 2012).

Furthermore, the bill set ambitious targets for reducing CO2 emissions and fossil fuel consumption, but the Senate and the National Assembly could not agree on a definitive cap on nuclear energy production and decided to postpone any decision until after the 2017 general elections (World Nuclear Association, 2022). However, in 2019, President Macron postponed the deadline for reducing

nuclear energy from 2025 to 2035, and recently, Macron has even announced the construction of six new NPPs by 2035, with the possibility of building an additional eight NPPs, in what is called a 'nuclear renaissance' (World Nuclear Association, 2022). Not only does Macron hope to reach the 2050 climate goals this way, but also, like his predecessors, Macron wants to use nuclear energy to make France an important world power again (Tanson, 2022).

4.2.3 Natural Gas and Nuclear Energy

In France, natural gas makes up only 14.2% of the energy mix, approximately 20% of which came from Russia. At the same time, France is one of the largest nuclear energy producers in the world, and it produces around 50% of its energy requirements domestically, of which more than 70% is derived from nuclear energy (Davis, 2012; IEA, 2021). Also, between 2005-2019, the share of renewables in the energy mix increased to 19%. These two factors keep France's CO2 output low relative to GDP growth whilst making it significantly resilient to the disruptions of Russian natural gas supplies (Baqaee et al., 2022; Taylor, Probert & Carmo, 1998; Rowher, 2017, Yougova, 2021).

Still, there are some downsides to France's nuclear policy. For instance, in August 2022, engineers discovered corrosion in the core of one NPP. As a result, twenty-six NPPs of the same or similar type had to be shut down for safety reasons, meaning that approximately 50% of France's NPPs are offline. With Europe's gas supply severely hampered, this energy loss could not come at a worse time (Alderman, 2022). Under normal circumstances, NPPs could compensate for the loss of natural gas from Russia (Baqaee et al., 2022). If France can resolve the issue, conduct regular maintenance on its NPPs, and build additional NPPs, France's energy security should remain reliable for several decades (Krikštolaitis, Bianco, Martišauskas, & Urboniene, 2022).

5. Results

5.1 Similarities and differences between French and German Strategic Energy Cultures

Initially, French and German strategic energy cultures followed a similar path. Both relied heavily on coal and started domestic nuclear programmes (Beltran, 2022: Högselius, 2022; Williarty, 2013). From 1955, the rise of crude oil and the Suez Crisis heavily affected the coal industries in both countries. However, the French coal industry could compete neither in quality nor quantity with its German peer (Beltran, 2022; Högselius, 2022). Thus, France's comparatively weak coal sector and energy import dependency early on spurred French leadership to search for alternative energy sources. Due to the discovery of oil fields in Algeria and domestic gas fields in other European countries, France could diversify away from coal, which was phased out in 1969. Contrarily, due to technological, economic and geological advantages, the German coal industry could survive, albeit in a consolidated state (Beltran, 2022; Farrenkopf, 2022; Appunn, Haas, & Wettengel, 2022).

The rising popularity of natural gas and the rise of crude oil significantly impacted the development of French and German strategic energy cultures, and approximately from this point, both strategic energy cultures started to diverge. Firstly, as natural gas increased in popularity, market supply could not meet the market demand. On the one hand, West Germany signed gas delivery contracts with the Soviet Union, which had copious amounts (Högselius, 2022; Högselius, 2013; Westphals, 2008). On the other hand, France became a temporary oil power due to the Algerian oil fields, giving itself and the European market access to cheaper oil (Beltran, 2022; Musso, 2017). However, two geopolitical developments greatly affected the development of French and German strategic energy cultures. Since Algerian independence in 1962, Europe no longer had access to cheaper Algerian oil. Naturally, this greatly exacerbated the Oil Crisis of 1973 and West Germany and France experienced severe oil shortages. Both countries had drastically different approaches to the crisis: West Germany chose to meet its oil demand by buying oil at exorbitant prices, and as a result, natural gas supplies from the Soviet Union became financially more attractive (Högselius, 2013; Whitney, 1974). Contrarily, France initially turned to renewables, but these were highly inefficient (Planete Energies, 2015). Thus, France's only remaining option was nuclear energy (Aldrich, 2008; Boyle & Robinson, 1981).

At this point, as West Germany turns more to natural gas and France to nuclear energy, French and German strategic energy cultures seemingly diverge. At face value, both options are very different from each other. However, by briefly going back in time, one can see that they appear to share a crucial commonality: Both choices are, at their core, underpinned by a historical motive, namely, each country's role in the Second World War. The war had a profound effect on French and German identity. For France, it was a matter of shame and humiliation. France was severely defeated by Germany, and its post-war geopolitical position in the world was in stark contrast to its former glory (Krige, 2006: Williarty, 2013). Similarly, post-war German identity is marked by guilt and the need for atonement for the atrocities it committed during the war (Chivvis & Rid, 2009; Westphals, 2008).

Evidently, post-war French and German identities have significantly influenced the trajectory of both strategic energy cultures. From the French government's perspective, nuclear capabilities were an inherent characteristic of powerful nations (Cho, 2013). If French identity were to be reconstructed, it would be on the metaphorical bedrock of nuclear energy (Hecht, 2001). Thus, nuclear energy became a state priority for France (Aldrich, 2008). On the other hand, due to Germany's guilt for its role in the war, Germany felt a responsibility to help Russia develop through economic cooperation. This initially manifested as Willy Brandt's Ostpolitik, which sought to normalise relations with the Soviet Union. Even in the 21st century, Germany's Russian policy was still heavily influenced by guilt, although it also certainly had a financial motive. Germany would help Russia develop, and Russia would supply Germany with cheap natural gas (Chivvis & Rid, 2009; Westphals, 2008).

The timeline skips to the 1970s again and arrives at another critical juncture. In the mid-1970s, nuclear energy became more important to the French and West German energy mix. As explained, nuclear energy was a necessary component of the reconstruction of French pride and identity. Therefore, the state and political parties were often deeply intertwined with the nuclear industry, whereas In West Germany, the nuclear industry was more of a private-sector affair (Aldrich, 2008; Flegel, 2010). As a result, the anti-nuclear movement in France experienced strong state suppression, lacked political representation, and thus, could not thwart the expansion of France's fleet of NPPs. Contrarily, the anti-nuclear movement in West Germany had more success, preventing the construction of several NPPs and establishing a foothold in politics through the German Green Party

(Williarty, 2013). Consequently, French nuclear energy would remain a staple of French energy production for the next forty years, whereas, in 1998, the SPD/Greens coalition led by Schröder steered Germany away from nuclear energy toward renewables (von Hirschhausen, 2018). Interestingly, the phase-out of nuclear energy ultimately reinforced the shift toward Russian gas that was started in the 1970s (Westphals, 2008; Szabo, 2015).

Firstly, the Schröder government facilitated the merger of major utilities into E.On Ruhrgas to protect corporate interests and ensure energy security. The company was meant to compensate for the loss of nuclear energy by importing significant amounts of natural gas from Gazprom. The monopoly of Gazprom and E.On Ruhrgas and the construction of Nord Stream 1, were the first steps to German dependence on Russian natural gas (Westphals, 2008; Szabo, 2015). Under subsequent coalitions, policies remained the same. However, in 2009, a conservative coalition briefly revived the idea of nuclear energy in the German energy mix. Nevertheless, this was short-lived, as, in 2011, the backroom deals between the government and the utilities and the Fukushima meltdown decreased public and political support for nuclear energy, resulting in plans to phase out nuclear energy by 2022 (Moss & Gailing, 2016; von Hirschausen, 2018). As renewables could not compensate for the loss of nuclear energy, Merkel announced the construction of Nord Stream 2, and Gazprom gained an even greater position in the German market.

Several critical things come to light by examining Germany's policy choices regarding natural gas: Schröder's friendship with and his reluctance to criticise Putin and the way the Merkel government dismisses concerns about Nord Stream 2 and susceptibility to Russian geopolitical extortion. These policy choices are a direct continuation of Willy Brandt's Ostpolitik, which itself is a product of Germany's post-war identity and need to atone for its transgressions in the Second World War. As a result, Germany has willingly turned a blind eye toward any concerns about its energy relations with Russia (Siddi, 2019; Westphals, 2008).

Similarly, in 2012 socialist president Francois Hollande's energy transition tried to push France from nuclear energy toward renewables by setting goals to reduce the share of nuclear power to 50% by 2025. Hollande announced a second bill in 2014 that would increase the share of renewables in the French energy mix (AN Center, 2012; Schneider, 2013). However, in 2019, President Macron extended the nuclear reduction deadline to 2035 and announced a nuclear renaissance, which would

help France reach the 2050 climate goals and increase its energy independence. It seems that, like with Germany and the Nord Stream pipelines, Macron's decision was influenced by France's post-war identity (Tanson, 2022). Like previous French leaders, Macron sees nuclear energy as a way to restore French prestige and France's position in the geopolitical arena again (Hecht, 2008; Tanson, 2022).

5.2 Compatibility between French and German Strategic Energy Cultures and ESA

Seemingly, Germany's strategic energy culture does not meet the ESA criteria. Firstly, it depended too much on a single supplier for its energy imports, such as coal, oil and natural gas, and inadequately diversified its energy mix (Bachmann et al., 2022). For instance, Gazprom became the primary supplies of natural gas and owned a significant share of the German energy market. However, this was a mistake, as Gazprom reported directly to the Kremlin and secretly conspired to prevent European energy diversification (Szabo, 2015; Westphals, 2008). The reliance on Gazprom led to the construction of Nord Stream 1, which provided a direct gas link from Russia to Germany. The German government dismissed any concerns from experts that this would increase dependence on Russia and provide it with an extortion tool (Adomeit, 2016; Pieper, 2022; Szabo, 2015). In 2011, experts voiced similar concerns about the construction of Nord Stream 2, which the German government once again dismissed (Akbari & Moazen, 2020; Siddi, 2019). Secondly, due to its dependence on Russia, Germany was extremely vulnerable to disruptions to the supply chain. In contrast, it must be said that Germany could substitute coal and oil imports relatively easily. Despite that, it failed to conceptualise similar contingencies for arguably its most crucial energy source: natural gas, and as a result, Germany experiences regular blackouts and risks deindustrialisation (Akbari & Moazen, 2020; Murray, 2022).

Contrarily, France's strategic energy culture appears less dependent on a single supplier and more resilient to disruptions than Germany's strategic energy culture. The current gas crisis is a perfect example of this: France has traditionally been a nuclear powerhouse and produces 50% of its energy requirements domestically (Davis, 2012; IEA, 2021). As such, natural gas is significantly less crucial to its energy mix than it is to Germany. When looking specifically at Russian natural gas, its importance diminishes even further (Bachmann et al., 2022; Baqaee et al., 2022). At the same time, it has made great strides in diversifying its energy mix by increasing the share of renewables (Yougova, 2021). Therefore, nuclear energy and renewables can easily compensate for the loss of Russian natural

gas in this particular scenario (Baqaee et al., 2022). However, on the one hand, the case study has also demonstrated that France's large share of nuclear energy can make it vulnerable when its NPPs are neglected (Alderman, 2022). On the other hand, if France addresses this issue and regularly maintains its NPPs, its energy security for the coming decades will be ensured (Krikštolaitis, Bianco, Martišauskas, & Urboniene, 2022). As such, one could conclude that France's strategic energy culture appears to best meet the ESA energy criteria.

6. Conclusion

Geopolitical developments such as Brexit, Trump's presidency, and an increasingly assertive China and Russia have expanded the scope of ESA to include other policy areas than defence. However, while the criteria for achieving ESA in defence are richly discussed and documented, the literature and the EU struggled with conceptualising criteria for achieving ESA in other policy areas. The definition ranges from, includes and combines ideas such as being free of external dependencies, the capacity to project military power autonomously and developing the institutional capacity and political will to determine and act out its foreign policy objectives. However, the core tenet of ESA is that its characteristics and goals depend entirely on the policy area to which it is applied. As the areas that the EU deems strategic are constantly changing and subject to geopolitical developments, one is unlikely to expect hard criteria for multiple policy areas soon. Despite the ambiguous nature and relatively little research on ESA in the energy sector, this demonstrated that ESA in the energy sector primarily revolves around energy security. Generally, the susceptibility of a country's strategic energy culture to external shocks and interferences and the level of dependency on a single energy supplier are preliminary indicators of how strategically autonomous a country's energy sector is. Defining and distilling criteria for achieving strategic autonomy in the energy sector was a crucial prerequisite for answering this thesis' central research question: *How and why do French and German strategic energy cultures differ, and to what extent do they inhibit or enable the creation of ESA in the energy sector?*

The key difference between the French and German strategic energy cultures is, respectively, the prominence of nuclear energy and fossil fuels in their energy mixes. The reason for this is the legacy of the Second World War and its effect on French and German post-war identity. These identities are the metaphorical roots from which French and German strategic energy cultures sprouted. In turn, as the roots are the tree's base, these post-war identities would be the base on which the strategic energy cultures developed throughout the decades, all the way to the present day. Germany's need for atonement was the root of its rapprochement with the Soviet Union and blinded German leadership to the dangerous developing dependency on Russian oil, coal, most importantly, natural gas. Similarly, France's need to restore national pride by developing its nuclear energy capabilities created a situation where domestic nuclear energy would take precedence over other

energy sources. As such, France's nuclear industry survived the protests of the 1970s, whereas Germany's nuclear industry was drastically diminished.

Therefore, Germany's nuclear energy loss and inadequate output from renewables cemented its dependence on Russia as the primary energy supplier. Contrarily, France produces a significant amount of its energy domestically, primarily through nuclear and, to a lesser extent, from renewables. Thus, Russian natural gas only comprises a low percentage of French gas imports. Consequently, France's strategic energy culture is significantly less dependent on a single supplier, and as the current gas crisis has demonstrated, affected by external interferences than Germany's strategic energy culture. Thus, based on these parameters, France's energy culture enables ESA in the energy sector, whereas Germany's energy culture inhibits it.

Lastly, this thesis has contributed to the literature by examining the development of ESA in other policy areas. However, this was limited to the energy sector, and even then, only two rudimentary criteria could be deduced. Interestingly, criteria such as reducing dependency on a single supplier were already discussed in the 2014 Energy Strategy, albeit without the term ESA. The literature could benefit from more specific and in-depth research into what ESA means for energy policies and how specific EU institutions or member-states conceptualise it. Also, future research could study how the invasion of Ukraine affected the concept of ESA and strategic energy cultures. In conclusion, the Second World War had a perpetual impact on French and German strategic energy cultures, which positively affected French strategic autonomy and negatively affected German strategic autonomy in energy security.

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