Abstract

This thesis examines the impact of Russia's 2022 invasion of Ukraine on Germany's renewable energy transition, called *Energiewende*. Over time, *Energiewende* turned Germany into the blueprint for large economies to build a climate friendly economy without jeopardizing growth. Germany relied on Russian fossil fuels, including liquified natural gas (LNG) and oil, to sustain a steady and affordable supply while creating their renewable energy markets. While dependence on Russian energy is common in Eastern and Central Europe, Germany was heavily criticized for their dependence — opponents cited security risks and support of an unethical regime as reasons for the country to abandon the source. When Russia invaded Ukraine in February 2022, German leadership grew immediately concerned with their supply of energy from Russia and began preparing for a severe scarcity of supply.

During this period the discourse around *Energiewende* began to shift. Renewable energy is no longer just a source of clean energy, it has become the symbol of energy independence — even being bestowed the title the 'freedom energy'. The newfound motivation of energy security led to a rapid acceleration of renewable energy expansion. As argued throughout this thesis, the acceleration took place precisely because of the newfound security motivation, as *Energiewende* underwent the process of securitization to shift away from Russian energy as quickly as possible. These findings suggest the framework to which nations think about renewable energy may be important for how rapid a clean energy transition occurs. Since many nations hold energy security and independence as a top priority, can renewable energy be their ticket to freedom?

Fueling Freedom: Germany's Energy Transition and the Russo-Ukrainian War

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May 2026

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Acknowledgements

I would like to thank my advisor, Professor Christopher Mitchell, for always providing me with thoughtful feedback. Not only was your expertise and advice needed to bring my project to fruition, your encouragement and reassurance powered me through. Please know your insight and wisdom will stretch past the project, as I will bring it with me to my next.

Thank you to the rest of my committee, Professor Desmond Fitz-Gibbon and Professor Kevin Surprise for your enthusiastic participation. Your classes inspired me to write this thesis and gave me the knowledge I needed to actualize it.

Thank you to the Department of International Relations, as well as the Department of German Studies. It feels bittersweet to be culminating my time at Mount Holyoke with a project about Germany the same semester as the German Department's sunset. I could not have even considered this project without my knowledge of the language provided by my wonderful German professor, Catherine McNally. Vielen Dank für alles.

Thank you to everyone who has had to hear me talk about this project over the past year, my friends, classmates, and coworkers. I feel lucky that I was met with excitement and encouragement at every corner. Also, thanks to Keenan who had to sit through many proofreading sessions with my messy ideas and disruptive giggles.

Last but not least, I would like to thank my mom, Sophie, and Evelyn for always believing in me. I know I was probably annoying at times with how much I would talk about my thesis, but you never failed to listen and offer words of encouragement. This thesis, like all things in life, could not have happened without your love and support.

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Acronyms

Many acronyms come from German words. The German phrase is italicized while the English is in parentheses.

AfD- *Alternative fur Deutschland* (Alternative for Germany)
BMWK/BMWE- *Bundesministerium für Wirtschaft und Klimaschutz/Energie* (Federal Ministry of Economy and Climate Protection/Energy)
BASE- *Bundesamt fur die Sicherheit der Nuklear Estorrung* (The Federal Ministry for the Safety of Nuclear Storage)
CDU- Christian Democratic Union
COP- Conference of Parties (also known as UNFCCC)
EEG- *Erneuerbare Energien Gesetz* (Renewable Energy Sources Act)
EIA- Environmental Impact Assessments
EnWG- *Energiewirtshaft Gesetz* (Energy Industry Act)
EU- European Union
FIT- Feed-in Tariffs
FRG- Federal Republic of Germany
GDR- German Democratic Republic
GHG- Greenhouse Gas Emissions
kWh- Kilowatts per hour
LNG- Liquefied Natural Gas
MP- Member of Parliament (Bundestag)
MPS- Market Premium Schemes
NABEG- *Netzausbaubeschleunigungsgesetz* (Grid Expansion Acceleration Act)
NATO- North Atlantic Treaty Organization
PV- Photovalitic
RES- Renewable energy source(s)
SPD- *Sozialdemokratische Partei Deutschland* (German Social Democratic Party)
StrEG- *Stromeinspeisungsgesetz* (Electricity Feed-in Law)
WindSeeG- *Windenergie-Auf-See-Gesetz* (Offshore Wind Act)

Section I: Introduction

The former German Finance Minister Christian Linder called renewable energy "the energy of freedom." [1] Although seemingly simple, this quote illustrates the complexity contained within Germany's renewable energy transition. Germany has been participating in one of the most ambitious energy transitions in the world. In scholarship, this transition is referred to as *Energiewende* (energy turn-around). Beginning in 2001, *Energiewende* has captivated the international community for decades as a "blueprint" energy transition, demonstrating what is possible for other large economies.[2] It was originally conceived as a climate change policy. Because *Energiewende* prioritizes carbon neutrality without jeopardizing economic growth, the model pioneered by the German government has been implemented in over sixty countries to-date.[3] Other nations are looking to Germany, *Energiewende* is one of the most consequential clean energy transitions in modern times.

Energiewende includes the turn away from fossil fuels and nuclear energy towards renewable energy source(s) (RES).[4] Within this thesis, *Energiewende* mainly references the laws and policies of German domestic renewable energy, including all RES deployment goals, of which Germany has many. For example, the 2011 nuclear moratorium and *Erneuerbare Energien Gesetz* (Renewable Energy Sources Act), hereafter EEG, are both *Energiewende* policies, while the Liquefied Natural Gas (LNG) pipeline Nord Stream falls outside the boundaries of *Energiewende* and into miscellaneous energy policy.

[1]"Germany to Spend 200 Billion Euros on Energy Transition in Independence Push | Clean Energy Wire."
[2]Weltenergierat Deutschland and World Energy Council, A German Energy Transition - Blueprint for the World?
[3]Fell, "About me."
[4]Von Hirschhausen, "The German Energiewende: An Introduction"

Critics argue that Germany's energy policies were contradictory due to their growing reliance on fossil fuels, particularly LNG, from Russia. To keep energy cheap and reliable, and to transition away from dirtier fossil fuels through *Energiewende,* Germany imported 1.012 billion Kilowatts per hour (kWh) of gas from Russia in 2021. Before 2022, approximately half of LNG and fifty five percent of oil consumed in Germany was sourced from Russia.[5] Germany is one of the largest energy importers in the world due to their large population and economy with limited natural resources. As *Energiewende* grew, so did Germany's dependence on Russia.

The status quo shifted in 2022 when Russia invaded Ukraine. Russia halted LNG supply to Germany, sparking the infamous 2022-2023 energy crisis. The impending crisis forced Berlin to make significant changes in energy policy to keep the German public safe and industry afloat. The changes made to *Energiewende* during this time remain permanently imprinted, as this era is cited as the largest revision made to renewable energy in decades.[6] Following the shock, renewable energy gained a new purpose, and *Energiewende* was no longer simply a climate policy. Instead, energy independence, security, and climate merged to make renewables the energy of freedom.

This thesis will compare the decision-making of *Energiewende* before and after the invasion, to identify how the policy and rhetoric of renewable energy adapted after the energy crisis. The findings of this thesis will give pointed information to two vital aspects of *Energiewende* that Russia's invasion may have impacted — time and efficiency. World leaders will look to Germany and their ambitious energy transition to model their own, and how it adapts to an existential threat is a vital test to the longevity and strength of the government and

[5]Bundesnetzagentur, "Bundesnetzagentur Publishes Gas Supply Figures for 2022."
[6]Maliszewska-Nienartowicz, "Impact of Russia's Invasion of Ukraine on Renewable Energy Development in Germany and Italy."

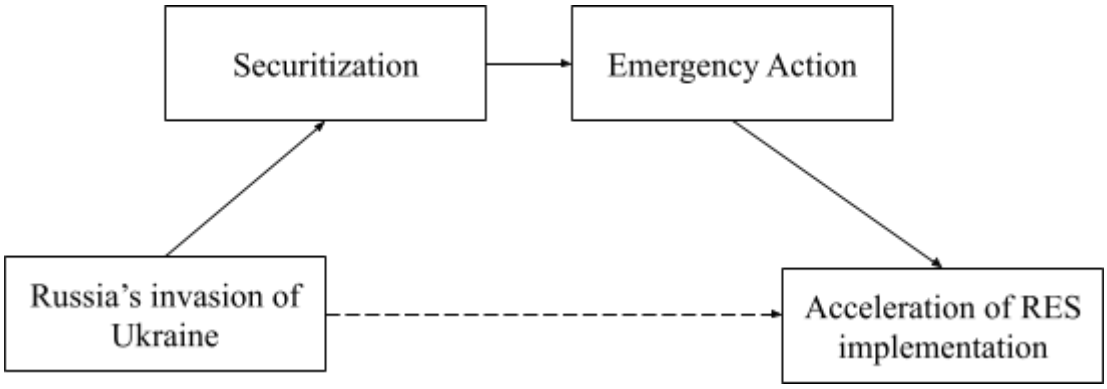
Energiewende itself. It is undeniable that this moment will be remembered, thus it ought to be understood.

Research Question and Methodology

This thesis will examine the following question: To what extent did Russia's invasion of Ukraine impact Germany's renewable energy implementation goals? I hypothesize that Russia's invasion of Ukraine and the subsequent Russo-Ukrainian War accelerated Germany's *Energiewende*. That is because the invasion allowed *Energiewende* to undergo securitization, a process where a state's policy decisions are driven by security considerations. The process of securitization led the German government to take emergency action that caused *Energiewende's* acceleration. More details on the process of securitization are given in the conceptual framework section of this chapter.

Energiewende began with the simple motivation of climate change mitigation. At the time of its original implementation, renewable energy was generally more expensive and harder to obtain than other sources, such as fossil fuels and nuclear energy. Therefore, the benefits of renewable energy were more limited. The founding *Energiewende* legislation, EEG, was written by Green Party members and was passed under the SPD-Green coalition, which had a strong focus on environmental issues. *Energiewende* would remain a climate-motivated policy until Russia's invasion of Ukraine. Following the invasion, Germany started planning a cut off of Russian energy trade. To secure an adequate supply, the German government began the process of securitizing renewable energy. Following Russia's invasion of Ukraine, *Energiewende* is the way Germany is accounting for both climate change and energy independence. The process of securitization accelerated RES implementation goals to obtain energy security.

There is a scholarly consensus that *Energiewende* has experienced an acceleration since 2022.[7] As argued in this thesis, this is a direct cause of Russia's invasion of Ukraine because it triggered securitization, leading to emergency action. That emergency action subsequently caused the acceleration that has been observed by scholars. The argument is illustrated below.



Methodology

To properly answer the research question, this thesis will utilize process-tracing and content analysis methods. Process-tracing is a method commonly applied to identify the origin of policies, it is helpful to assess the linkage between Russia's invasion of Ukraine and the acceleration of *Energiewende* by identifying the presence of emergency action. Content analysis will analyze the discourse surrounding *Energiewende* before and after the invasion to identify the origin of security discourse. Considering this research is analyzing the political and social phenomena within a single case, these methods will allow for the evidence to be thoroughly examined.[8] Additionally, these methods are particularly well-matched with the conceptual

[7]Wiertz et al., "A Turn to Geopolitics: Shifts in The German Energy Transition Discourse in Light of Russia's War against Ukraine."
[8]Collier, "Understanding Process Tracing."

framework of this thesis: securitization theory. As explored further in the conceptual framework section, securitization is itself a process. Therefore, process-tracing, as it is a temporally based methodology, will be able to effectively identify the steps of securitization within *Energiewende*.

Process-tracing and content analysis work in tandem to show a causal relationship between Russia's invasion and the acceleration of *Energiewende* implementation. Broadly, this thesis studies the origin of security as a main motivation for renewable energy deployment. Security, in this case, can only be observed as a motivation through the way politicians discuss policies. Therefore, content analysis must be applied to identify its emergence. Once completed, process-tracing is used to find the causal interpretation of Russia's invasion leading to an acceleration.

To see the shift toward security, qualitative content analysis will be applied to political speeches, legislation, and official government statements before and after the invasion to compare the rhetoric behind each. As argued, climate change was the original and sole motivation for *Energiewende* until Russia invaded Ukraine. Following the invasion, energy security became a main motivation that could be achieved through RES by obtaining energy independence. To see the prevalence of these two motivations and the emergence of the latter, particular words and phrases were coded to detect the motivation for a decision. The chart below shows common words and phrases in English that are used when describing the reason for *Energiewende* and its policies, as well as the motivation that it is associated with.

Climate Motivation	Security Motivation
Climate (-change, -action, -activism)	(National-, Public-, Energy-) Security
Sustainable/Sustainability	Emergency
Global warming	Freedom
Environment	Independence
Carbon neutral/ity	Direct mentions of the Russo-Ukrainian War

When these words or phrases were used in evidence analysis, it was when they were specifically addressing the motivation behind a law or policy. The mention of them within evidence suggests the motivation it is associated with is present. Lack of mentions of those words and phrases suggests the motivation is not present. Examining speeches, legislation, and statements to find the motivation for policies will help to inform the findings of this thesis. Therefore, the content analysis will conclude with answers to the following facets of *Energiewende*'s evolution: the original motivation of *Energiewende'*s foundational policies such as EEG and *Windenergie-Auf-See-Gesetz* (Offshore Wind Act), hereafter WindSeeG; when security was first mentioned as a motivation for *Energiewende* laws and policy; and the motivation for all notable RES laws and policies from February 2022 to December 2024. The hypothesis will be supported if it is found that security became a primary motivation for *Energiewende* immediately following Russia's invasion of Ukraine.

The findings of the content analysis will be applied to process-tracing for the purpose of finding the causal link between Russia's invasion of Ukraine and the acceleration of *Energiewende*. Once completed, process-tracing will link Russia's invasion of Ukraine with the acceleration of renewable energy deployment goals that have been observed. This acceleration is through the process of securitization, where the mention of security within the discourse around

Energiewende represents the presence of securitization. The causal interference is outlined below as follows:

1. Russia's invasion of Ukraine caused an energy crisis in Germany.
2. The risk of an energy crisis led to emergency action to secure an adequate supply, which is when renewable energy expansion became a security measure.
3. The emergency action taken included expanding renewable energy deployment, which accelerated *Energiewende.*

The hypothesis will be affirmed if causation is identified at each step of the above outline. To assist with linking each step together, the process of securitization will be identified.

As required when using process-tracing methods, counterfactual outcomes will be proposed when the process of securitization is proposed.[9] The counterfactual is a proposed alternative event, designed to contextualize the original event, where the causal mechanism does not occur, acting as a control to test the hypothesis. The outcome of the counterfactual serves as a necessary test of the legitimacy of the causal mechanisms of the original event. Counterfactuals will be offered regarding the Fukushima disaster, when securitization did not occur, and the Russian invasion of Ukraine, when securitization did occur. These are necessary comparisons because they are the two most significant geopolitical shocks that impacted *Energiewende*. If securitization of *Energiewende* occurred at all, it likely occurred as a result of either of these events.

Sources

Primary sources were used to conduct both process tracing and content analysis. The main sources used were that of laws and their amendments, policies, official government

[9]Ricks and Liu, "Process-Tracing Research Designs."

statements, speeches, and interviews between journalists and politicians. Statements made about legislation by politicians and the government, in addition to the preambles of laws, were used to illustrate the motivations behind the pieces of legislation, whether it be climate or security. Laws and policies were used to display the deployment mechanisms the German government was using to further *Energiewende,* showing how far each policy advanced *Energiewende*'s goals. To illustrate this point, EEG 2012, 2014, and 2017 were analyzed and discussed, not only to see the evolution of *Energiewende* policy, but also to show the slow and measured progress of EEG. This highlights the drastic shift in post-invasion renditions of EEG. Additionally, non-RES laws and policies were analyzed because they supplemented the arguments regarding extraordinary actions taken following the Fukushima disaster and Russia's invasion of Ukraine. The main laws and policies that were analyzed are described below. The reason for these policies' inclusion is to consider their evolution over time. The year(s) of the policies in parentheses show the versions of the laws included throughout this thesis. They are organized roughly based on their significance to the research question.

Renewable Energy Sources	**Nuclear**	**Fossil Fuels/Other**
EEG (2000, 2012, 2014, 2017, 2023)	Atomic Energy Act (2000, 2010, 2011)	Nord Stream I & II
WindSeeG (2016, 2022)		Gas Emergency Plan (2022)
Energiewirtshaft Gesetz (Energy Industry Act) (EnWG) (2022)		
NABEG (2022)		
Energy Efficiency Act (2022)		
Energy Concept (2010)		

Stromeinspeisungsgesetz (Electricity Feed-in Law) (StrEG) (1998)	

The laws and policies analyzed, as well as speeches and statements, were sourced through a variety of locations, including the German Federal Government's official archives, namely *Bundesarchiv* and *Bundesgesetzblatt*. Evidence was collected in both the English and German languages. This bilingual examination allowed for deeper access to evidence, which permitted a more comprehensive study and conclusion of the research question.

Contribution

Energiewende has been widely studied because of its vitality. The majority of scholarship in this area has related to the domestic implications and outcomes of the transition.[10] [11] [12] Most of the literature in this area, while providing valuable insight, fails to consider geopolitical impacts on the policy itself. Germany, and thus their energy transition policy, does not exist in a vacuum. The literature that does account for geopolitical factors, such as Justyna Maliszewska-Nienartowicz's work, lacks a linkage between these shocks and internal rhetoric.[13] Additionally, there is ample literature regarding Russo-German energy trade.[14] [15] [16] Considering the recent shift in this relationship, the majority of this literature is outdated and must be

[10]Rechsteiner, "German Energy Transition (Energiewende) and What Politicians Can Learn for Environmental and Climate Policy."
[11]Krewitt and Nitsch, "The German Renewable Energy Sources Act—an Investment into the Future Pays off Already Today."
[12]Blazejczak et al., "Economic Effects of Renewable Energy Expansion."
[13]Maliszewska-Nienartowicz, "Impact of Russia's Invasion of Ukraine on Renewable Energy Development in Germany and Italy."
[14]Westphal, "German-Russian Gas Relations in the Face of the Energy Transition."
[15]Maltby and Mišík, *Energy Transitions in Central and Eastern Europe*.
[16]Rahr, *Germany and Russia: A Special Relationship*, pt. 2.

revisited. For example, many pieces discuss the possibility of a cut off of Russian LNG and how those fears are unlikely to actualize.[17] [18]

In post-invasion literature, there have been recent studies on the socio-political aspects of *Energiewende,* such as motivations of the policy and international discourse. These pieces highlight the shift between pre and post-invasion, yet they lack a connection to the legislation itself. In political-economy-focused *Energiewende* studies, many scholars have found an acceleration in renewable energy implementation following the invasion. They cite the increase of the sheer number of pieces of energy legislation, as well as the diversification of methods for implementation.[19] Therefore, there are two post-invasion camps of literature regarding *Energiewende*, one examines the acceleration of *Energiewende*, while the other analyzes the discourse around *Energiewende* within a socio-political context.[20] This thesis ties these camps together while also tracing the history of *Energiewende* to draw important conclusions regarding its evolution post-invasion. Within the literature examined for this thesis, it appears no one has yet united these camps and explored their direct relationship.

Studying how Russia's invasion of Ukraine impacted the acceleration of *Energiewende* through legislative and discursive changes is a new approach to what's been observed. Additionally, the framework of securitization used in this thesis has never been applied to *Energiewende* before. Not only does this thesis include an internalization of a geopolitical shock widely unexplored in literature, it combines the socio-political shift with the legislative shift to see the transformation from a broad perspective.

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[17]Pollak et al., *Energy Policy of the European Union*.
[18]Rahr, *Germany and Russia: A Special Relationship*, pt. 2.
[19]Maliszewska-Nienartowicz, "Impact of Russia's Invasion of Ukraine on Renewable Energy Development in Germany and Italy."
[20]Wiertz et al., "A Turn to Geopolitics: Shifts in The German Energy Transition Discourse in Light of Russia's War against Ukraine."

Studying *Energiewende* through the lens of securitization provides important insights into how renewable energy will be handled in Germany moving forward. As previously mentioned, *Energiewende* has been widely explored in many fields, for two main reasons: First, Germany's *Energiewende* is the most ambitious and significant renewable energy transition in the world. As illustrated throughout this thesis, Germany has been a pioneer of renewable energy research, as well as one of the earliest adopters of a wide-scale clean energy transition. Second, in addition to Germany's notable energy leadership, they are also a significantly influential country in Europe and around the world due to its economic and demographic size. They are the largest economy in Europe, having the fifth largest Gross Domestic Product in the world; have the third largest population in Europe; and they are the world's seventh largest energy consumer.[21] Therefore, the world is watching as Germany embarks on this ambitious energy journey.

Argument Outline

The remainder of the first chapter is the literature review and the conceptual framework. The second chapter, Early *Energiewende* (2000-2011), displays the climate change mitigation motivations of the foundational pieces of *Energiewende* legislation. This is illustrated through the political positions of the ruling coalition, *Sozialdemokratische Partei Deutschland* (German Social Democratic Party) hereafter SPD, and the Green Party writers of the foundational *Energiewende* legislation. This chapter also explains important concepts for *Energiewende* legislation, such as Feed-in Tariffs (FITs), and also reviews early revisions of *Energiewende*.

The third chapter, *Energiewende* in the 2010s (2011-2021), focuses on the development of *Energiewende* after the foundation of the RES industry was established. This chapter

[21]"Germany Country Commercial Guide."

specifically focuses on the German government's reaction to the Fukushima disaster and argues this reaction cannot be characterized as securitization. This chapter reviews some important policy changes that happened in the 2010s, like the switch from FITs to the auction system. This chapter ends by discussing the history, use, and controversy of the Nord Stream pipelines.

The fourth chapter, *Energiewende*'s Securitization and Acceleration (2022-2024), follows the actions after Russia's invasion of Ukraine from February 2022 to April 2024, over two years into the Russo-Ukrainian War. This chapter begins with a timeline of events, followed by the details of the legislative and discursive shift that took place in 2022. The end of the chapter includes identifying securitization in post-invasion *Energiewende* and connects securitization with the acceleration seen after the implementation of post-invasion legislation. The thesis concludes with a discussion, revisiting the question, and hypothesis and summarizing the argument.

Literature Review

Energiewende is a landmark policy that has shaped renewable energy transitions of large economies. Understanding the process of *Energiewende* and its effects will be vital for other nations' transitions. I will first explore the history and significance of *Energiewende*, then the domestic and international conversation, and finally the niche of literature regarding external shocks to *Energiewende*, including Fukushima and Russia's war. The majority of *Energiewende* scholarship surrounds the domestic implications and outcomes of the transition. This includes, but is not limited to, political discourse, economic outcomes, and socio-technological development caused by the transition. The international conversation predominantly relates to Germany's relationship with energy trade partners, and how those relationships will transition alongside *Energiewende*. There is a third camp of literature combining the aforementioned conversations, exploring domestic reactions and outcomes from international shocks. This camp mainly relates to the nuclear disaster in Fukushima, Japan, and Russia's Invasion of Ukraine, but may include the 1970s oil shock, where Germany originally began investing in renewable energy technology.

History and Significance

Energiewende is not a disregarded topic among energy studies scholars because of the rich history and significance of Germany's transition. The official start of *Energiewende* is not necessarily clear, as the evolution of German energy policy and its relationship to renewables spans decades. However, the current-day characteristics of German renewable energy policy

appeared in the 1970s. This is when Germany first invested in RES, experienced a newfound environmental awareness among FRG (West German) civilians, and it was the inception of the anti-nuclear movement.[22] After the oil shock of 1973, the countries most impacted adapted their energy policies in a variety of ways — many of which the remnants can still be seen today. For example, France developed the Messemer Plan to construct dozens more nuclear power plants and the US began to strengthen domestic oil reserves.[23] The FRG government, the predecessor of the unified German government, used the opportunity to invest millions of Deutsche Marks into R&D of solar photovoltaic (PV) and other renewable energy technologies. This made Germany one of the first countries to invest in renewable energy at a large scale.[24]

Not only was the FRG interested in diversifying energy sources, but they were also increasingly interested in environmental policy due to new pressure from civilians. In part because 'Limits to Growth', an award-winning novel highlighting the overuse of earth's natural resources, was a best-seller in that the FRG, the citizens began to pressure the government for environmental protection.[25] [26] It was at that point the FRG government began passing swaths of environmental protection legislation, and all major political parties found consensus on prioritizing the issue. Therefore, the government was investing into carbon-neutral energy sources, and these sustainable initiatives were widely supported by the public. This set up the German government well to pioneer a progressive energy policy.

1975 saw one of the largest anti-nuclear protests in German history in Whyl– this protest was later called the "birthplace of the anti-nuclear movement".[27] The anti-nuclear movement gained momentum among the public and eventually birthed the Green Party, which gained

[22]Von Hirschhausen, "The German 'Energiewende' An Introduction"
[23]Le Gros, "The beginning of nuclear energy in France."
[24]Laird and Stefes, "The Diverging Paths of German and United States Policies for Renewable Energy.", 2620.
[25] Meadows et al., *The Limits to Growth*.
[26]Uekotter, *The Greenest Nation?*
[27]Hake et al., "The German Energiewende – History and Status Quo."

national recognition in 1980 when it first won seats in the Bundestag. While the most widely attended protest happened in the West, anti-nuclearism was equally as popular among environmentalists in the German Democratic Republic (GDR, East Germany). The GDR was less able to organize environmental groups, and they had limited organizations that held similar beliefs as their Western equivalents.[28] For example, the Alliance 90 was the GDR equivalent of the Green Party. Thus, when Germany unified, the West Green Party merged with the Alliance 90 to form a unified environmental party (called Greens/Alliance 90) with nationwide support.[29]

The Green Party's platform was naturally environmental protection, but it was the only major political party to staunchly oppose nuclear energy development. After the Chernobyl disaster in 1986, the Social Democrats (SPD) joined the Greens in opposing nuclear energy. In 1998, the SPD coalesced with the Greens and passed the EEG, containing a carbon-neutrality goal and nuclear phase-out. Considering EEG is the foundation of 21st-century German energy politics, this is when many scholars consider the beginning of what we know as *Energiewende.*[30]

Energiewende is one of the most important renewable energy transitions and will remain historically significant for decades to come. Germany was an early adopter of renewable energy. Not only were they already investing in renewable R&D in the 1970s, but they were also one of the first countries to adopt an ambitious plan to build a renewable energy sector for the sake of climate change mitigation. When EEG was passed, the European Union (EU) would still have eight years until it developed its own carbon neutrality goal.[31] Germany was also the first large economy country to set a carbon-negative date in addition to a carbon neutrality date.[32] In addition, it is widely believed among experts that the success of *Energiewende* means other

[28]Rink, "Environmental Policy and the Environmental Movement in East Germany."
[29]Uekotter, *The Greenest Nation?*
[30]Von Hirschhausen, "The German 'Energiewende' An Introduction"
[31]European Council, "5 Facts about the EU's Goal of Climate Neutrality."
[32]Goodman and Gabbatiss, "The Carbon Brief Profile."

countries have used/will use *Energiewende* as a blueprint for their energy transitions. *Energiewende* has met every renewable energy implementation goal on time, becoming a capital of innovation for renewable energy technologies, all while keeping it reasonably affordable for consumers. *Energiewende* stands out from other energy transitions for these reasons: early adoption, consistent progress, and continued success.

Domestic Political Economy

One topic of discourse regarding *Energiewende* explores the motivations and political goals of the transition. *Energiewende* is made up of thousands of pages of legislation spanning infrastructural, economic, technological, bureaucratic, and climate topics. The wide range of aspects that *Energiewende* will affect makes the long-term goals somewhat unclear. Previous scholarship strongly suggests that the primary motivation of *Energiewende* is climate change mitigation through carbon emission reduction.[33] [34] A study of top German political actors found consensus that *Energiewende* is chiefly for the prevention of climate change. Additionally, eighty percent of those surveyed believed there were other motivations involved: supply protection, nuclear phase out, and job creation were other high-ranking goals.[35] Scholars have a similar consensus — climate change mitigation is the primary motivation for *Energiewende*. The most extreme example of this comes from Weimann, who claims climate change prevention is the sole motivator. That is because the policy would not make economic sense if climate change was not the motivating factor.[36]

These findings are an important insight into the original motivations of *Energiewende*, but Russia's invasion of Ukraine must be included when considering the motivations and goals

[33]Joas et al., "Which Goals Are Driving the Energiewende?"
[34]Weimann, "Rettet die Energiewende?"
[35]Joas et al., "Which Goals Are Driving the Energiewende?"
[36]Weimann, "Rettet die Energiewende?"

within the current version of *Energiewende*. It is possible that the shock caused by Russia's invasion caused the German energy market to shift priorities for political actors and policy-makers. Therefore, these findings can only be applied to pre-war versions of *Energiewende*.

Another aspect of the domestic conversation revolves around the economic landscape *Energiewende* has crafted. The successful implementation of *Energiewende* relies on a robust and competitive renewable energy sector, which did not exist in Germany in 2000, when EEG was passed. In 2000, renewable energy made up only five percent of Germany's energy mix, and renewable energy was costly for consumers.[37] Germany had a two pronged approach to the economic challenges of *Energiewende*: FITs and technological innovation. The legal basis for these solutions is found within the EEG, EnWG, StrEG, and other supplementary legislation.[38] FITS revolutionized the renewable energy market by guaranteeing at or above market prices for renewable energy generation. This made renewable energy more accessible for consumers and made renewable energy profitable long before it naturally would have been. This structure incentivized consumers to utilize affordable renewables like PV technology, in turn funding decentralized energy systems and PV research and development.[39] Previous scholarship considered these foundational *Energiewende* policies to be extremely effective at transforming renewable energy in Germany from an infant industry to a world leader of innovation.[40] An analysis conducted by Krewitt and Nitsch found EEG policies used to bolster the renewable energy industry internalize the majority of the externalities caused by fossil fuel production,

[37]Ember, "Germany."
[38]Rechsteiner, "German Energy Transition (Energiewende) and What Politicians Can Learn for Environmental and Climate Policy."
[39]Rechsteiner, "German Energy Transition (Energiewende) and What Politicians Can Learn for Environmental and Climate Policy."
[40]Rechsteiner, "German Energy Transition (Energiewende) and What Politicians Can Learn for Environmental and Climate Policy."

making the policy profitable. It is worth noting that this study was conducted only three years after EEG was implemented, and the authors found EEG to already be profitable for Germany.[41] A further suggestion of the positive effect *Energiewende* has on the German economy comes from Blazejczak over a decade after Krewitt and Nitsch's study, where *Energiewende* was found to have net positive economic effects through employment and sectoral restructuring.[42]

Russo-German Relations

One cannot discuss the history of German energy sources without acknowledging its past dependence on Russia. Before the energy cut off in 2022, Germany was heavily reliant on natural gas trade with Russia, as fifty five percent of all natural gas consumed in Germany came from Russia.[43] This issue was more severe in Germany than in other European countries, but nearly every country in Europe dealt with some level of dependence on Russian energy.[44] Scholars were well aware of this and frequently discussed the topic in both German and European contexts.[45] [46] [47] Westphal argues that Germany's reliance was built on a mutually beneficial relationship, as Germany is a large importer and Russia is the largest exporter. Their energy relationship began in the 1970s, when tensions were high between the Soviet Union and Federal Republic of Germany (FRG), as an attempt at interdependence and mutual benefit during the Cold War. The policy position of trading with a nation to avoid conflict, known as *Wandel durch Handel* in German, is steadfast, and many say it can explain why Russia remained so important in German energy for so long.[48] The FRG position on Russia during this time would form the foundation of *Ostpolitik*

[41]Krewitt and Nitsch, "The German Renewable Energy Sources Act—an Investment into the Future Pays off Already Today."
[42]Blazejczak et al., "Economic Effects of Renewable Energy Expansion."
[43]Eberly et al., *How Did Germany Fare without Russian Gas?*
[44]Maltby and Mišík, *Energy Transitions in Central and Eastern Europe*.
[45]Westphal, "German-Russian Gas Relations in the Face of the Energy Transition."
[46]Rahr, *Germany and Russia: A Special Relationship*, pt. 2.
[47]Tekin and Williams, *Geo-Politics of the Euro-Asia Energy Nexus*.
[48]Blumenau, "How Russia's Invasion Changed German Foreign Policy."

(East Politics), the FRG's foreign relations with communist states, specifically the diplomatic relationship with the GDR. The attempt at interconnectedness was so successful that thirty years later a conversation around over-reliance was sparked around the time of EEGs original implementation. Westphal, along with other scholars, believes the fossil fuel foundation of their trade relationship means it would be difficult to remain trade partners during a decarbonization process. This is especially relevant when considering the skepticism many Germans hold towards the actions of Russia's government.[49] Overall, many believe Germany was growing dubious of Russia years before the war and began the process of diplomatically distancing itself, regardless of their trade interdependence.[50]

In the former GDR, the story is not as simple. Many East Germans are old enough to remember when their country was an ally of Russia, and the FRG was the enemy.[51] These individuals with residual sympathy, tend to have a harder time accepting a distance relationship with Russia. In a study conducted in 2021, fifty percent of East Germans would like a closer relationship with Russia than what Germany currently has as opposed to only twenty five percent of West Germans.[52] Although many East Germans have no issue with a reliance on Russian energy, this viewpoint is not well represented within the current coalition and does not hold weight in federal politics. The only major party with pro-Russia stances, the far-right *Alternative fur Deutschland* (Alternative for Germany), hereafter AfD, is more popular in the GDR than in the FRG, winning approximately thirty six percent of votes in the GDR and only eighteen percent in the FRG.[53] The AfD has little power in the federal government because every other party refuses to work with them, so any pro-Russia sentiments are not often discussed. It is worth

[49]Westphal, "German-Russian Gas Relations in the Face of the Energy Transition."
[50]Rahr, *Germany and Russia: A Special Relationship*, pt. 2.
[51]Knight, "What's behind Eastern Germans' Empathy for Russia?"
[52]"Forsa-Umfrage Zur Partnerschaft von EU Und Russland: Klare Mehrheit Wünscht Engere Beziehungen."
[53]*Anadolu*, "Far-Right AfD Becomes Strongest Party in Eastern German States."

noting that as the war drags on, disapproval of Russia is growing among East Germans, and the East German public generally supports sanctions and independence from Russia.[54]

The increasingly negative sentiments towards Russia found in Germany were similar to those in Europe as a whole. Scholars focused on Europe's dependence on Russian energy have strategized how Europe can free itself from Russia's energy exports and often touches on the opposing views on Russia within the European Union. Some more extreme positions come from Schubert, who argues interdependence is not an issue the EU needs to address, and Smith-Stegen, who argues Russia uses exports as a manipulative tool and they should act to free themselves from Russia's "energy weapon".[55] [56] Many perspectives lie between the aforementioned literature, with many arguing that it would be wise for Europe to wean themselves from Russia and diversify their trade relationship.[57] [58]

Germany, Europe, and Beyond

Many see *Energiewende* as an opportunity for diversified energy partnerships. Because *Energiewende* is an ambitious policy, many have argued that they will need to partner with nearby countries for carbon-neutral energy, in order to achieve their goals.[59] This was researched prior to Russia's invasion in addition to post-war research where Russia's cut off was considered. Before Russia's invasion, Norway was the second-largest supplier of fossil fuels to Germany.[60] Although Norway was a significant supplier of energy to Germany, there was no concern over the persistence of their trade relationship through *Energiewende* because their energy

[54]Knight, "What's behind Eastern Germans' Empathy for Russia?"
[55]Pollak et al., *Energy Policy of the European Union*.
[56]Smith Stegen, "Deconstructing the 'Energy Weapon.'"
[57]Maltby and Mišík, *Energy Transitions in Central and Eastern Europe*.
[58]Belyi, *Transnational Gas Markets and Euro-Russian Energy Relations*.
[59]Maliszewska-Nienartowicz, "Impact of Russia's Invasion of Ukraine on Renewable Energy Development in Germany and Italy."
[60]Beck et al., "The German Energy Transition after the Russia-Ukraine War-- Challenges and Opportunities.", 4, fig 2.

relationship includes diverse energy sources. Norway is known as the largest fossil fuel producer in Europe aside from Russia. Unlike their counterpart, Norway is committed to RES and has been called Europe's "green battery".[61] Scholars explored Germany and Norway's trade relationship through *Energiewende* and have found major possibilities for hydropower trade.[62] After Russia's invasion, Norway filled the void of Russian natural gas and announced further renewable energy trade deals.[63] [64]

Beyond energy trade deals, Germany is linked to the EU through a shared energy policy. While the EU does not have direct legal jurisdiction over member states' energy policy, they do have the legal basis over the environment, trans-European networks, difficulties in the supply of products, and other related provisions.[65] Since the EU does not have direct jurisdiction over energy policy, there have been power struggles over the legality of various policies enacted by member states. Germany is no exception to this, as they have faced multiple legal battles with the European Commission over their deployment schemes.[66] Despite occasional disputes, Germany's major role in the EU, coupled with its pioneering RES policies, put them in the position to lead the EU member states energy policy. For example, the EU's renewable energy policy, implemented after Russia's invasion of Ukraine, REpowerEU, is less significant in Germany than other member states because it did not extend domestic ambitions. Although the EU plays a role in German energy policy, Germany plays a more influential role within the EU and member states energy policy.

Energiewende presents opportunities for trade beyond Europe. As Germany searches for alternative energy partnerships, they have focused on strengthening solar partnerships with China

[61]Gullberg et al., "Towards a Low Carbon Energy Future – Renewable Energy Cooperation between Germany and Norway."
[62]Gullberg, "The Political Feasibility of Norway as the 'Green Battery' of Europe."
[63]Humpert, "EU Proposes Russian Gas Ban for 2027 But Imports on the Rise Again, Norway Remains Top Supplier."
[64]Gréta, "The Future of the Norwegian-German Relationship in the Context of Emerging Norwegian Gas Supply."
[65]Kanellakis et al., "European Energy Policy—A Review."
[66]

— the global leader of PV production — and looked into collaborations with African Nations for hydrogen.[67] Some argue these international partnerships will be necessary for *Energiewende* to achieve its ambitious goals, and will have a multitude of short to long-term effects, including building a "fully integrated renewable energy economy".[68]

Russia's Invasion

Three days following Russia's invasion, Chancellor Olaf Scholz delivered a speech to the Bundestag chamber. This infamous speech, now called *Zeitenwende* (turning point in English), acted as Germany's reaction to the invasion and outlined their next steps related to military action, economic repercussions, and new energy policy all for the purpose of condemning Russia's actions. In literature, this speech has been considered to be the breakoff of *Wandel durch Handel* from Russian relations. As Blumenau argues, this is evident through the reaffirmation of security for Germany and the EU by increased military spending, harsh sanctions on Russia, and complete alignment with Western Europe.[69] *Zeitenwende* was significant for many reasons. Mainly, it acknowledged the new era of war in Europe and set new groundwork for Russian relations, where diplomacy is no longer foundational.

The new tone introduced in *Zeitenwende* can be found throughout political discourse since the invasion. As found by Wiertz, there were multiple changes in *Energiewende* discourse after the invasion. First, there was a new branch of individuals blaming *Energiewende* for natural gas dependence in the first place. This weakened the previous consensus on the necessity of *Energiewende*. As a result, non-renewable sources regain popularity among some groups. This includes reigniting the conversation around nuclear energy and many pushed the government to

[67]Beck et al., "The German Energy Transition after the Russia-Ukraine War-- Challenges and Opportunities."
[68]Beck et al., "The German Energy Transition after the Russia-Ukraine War-- Challenges and Opportunities."
[69]Blumenau, "How Russia's Invasion Changed German Foreign Policy."

reinstate nuclear energy as a means of energy independence. Finally, and most importantly for this work, Russia's invasion provides the German government with new justifications to push renewable energy. New emphasis on peace, security, and freedom from foreign sources allows the government to implement policies that may otherwise be unpopular.

Maliszewska-Nienartowicz would argue that Weirtz's final finding is the precise reason why there was an increase in renewable energy legislation following Russia's invasion.[70] In her 2024 paper, Maliszewska-Nienartowicz compares Germany and Italy's renewable energy transition post-invasion. She finds that since 2022, there has been an increase in renewable energy legislation. In order to see an adjustment to new targets, the German government must further incentivize the private investments in renewable energy and create business opportunities. Additionally, she notes that Germany's reaction included more than just renewable energy: Germany reopened thirteen coal-fired power plants and announced plans for new LNG terminals (that can be used for hydrogen long-term). Generally, an increase in renewable energy legislation coupled with increased cooperation within the EU would be the reasons for an acceleration of renewable energy implementation, although social and economic barriers still remain. For Germany to be successful in its post-invasion energy plans, it must not neglect economic incentives for renewable energy.[71]

Although the invasion altered former truths within *Energiewende* policy, discourse, and dilemmas, scholars believe the invasion presents Germany with an opportunity for growth. *Zeitenwende* replaced *Wandel durch Handel* with security at the forefront of Russian relations. This allows the government to pass sweeping renewable energy legislation under the guise of security. In order to achieve full energy independence, Germany must supplement renewable

[70]Maliszewska-Nienartowicz, "Impact of Russia's Invasion of Ukraine on Renewable Energy Development in Germany and Italy."
[71]Maliszewska-Nienartowicz, "Impact of Russia's Invasion of Ukraine on Renewable Energy Development in Germany and Italy."

energy goals with financial incentives, diversified partnerships and EU cooperation, and — as many argue — diversifying energy sources.

Conceptual framework

This paper will utilize Buzan et al.'s Securitization theory as the conceptual framework for analysis. This theory is often used to explain why an issue is deemed a security risk as well as the process by which a state or non-state actor must go through to securitize an issue. Simply defined, securitization in Buzan et al's theory is an actor's action to protect an issue from an existential threat, moving it out of politicization in the process. The focus on the process of securitization makes it an ideal theory to analyze the changing landscape of energy politics in Germany after Russia's invasion of Ukraine. The following will describe Securitization theory by defining key terms and ideas, explaining the integration of securitization into energy studies, and arguing for the relevance of securitization in the case of *Energiewende*. Overall, the securitization of *Energiewende* accelerated RES implementation because it allowed for emergency action to be taken.

Implications in Securitization Theory

Buzan et al.'s theory has two distinctions from previous security frameworks. First, Securitization can be applied to the environmental sector, economic sector, and — as it will be used in this paper — the political sector. Buzan et al. note these sectors do not exist in isolation and often interact with each other,[72] meaning one theory of security should be used for all

[72]Buzan et al., *Security*..

mentioned sectors. Considering previous connotations of security limited the application of security to military affairs, Securitization allows for a diversity of applications. Second, Buzan et al.'s theory has a particular emphasis on the process of securitization. In contrast, when security was simply a military issue, it could only refer to the issue after it had already gone through the process of securitization. Thinking about security in this way excludes many previously non-securitized issues that have become securitized due to political flashpoints, rhetoric, or specific conditions. One example of this is the US. War on Drugs. Drug smuggling was not always seen as a threat to national security. In the 1970s, the US securitized the issue after identifying it as an existential threat to public health.[73] This example illustrates the process of Securitization theory by focusing on the act of protecting the 'referent object,' which is any aspect of a state that has a "legitimate claim to survival." [74] The protection of a referent object can help explain the different treatments of securitized issues and standard political issues.

As previously mentioned, securitization refers to the actions taken to protect a referent object from an existential threat. These actions are all in the name of security, which Buzan et al. simply define as "a situation posing an existential threat to a designated referent object".[75] In the case of *Energiewende,* domestic energy suppliers and consumers act as the referent objects and the consequences of the war in Ukraine act as the threat. When looking deeper into what constitutes an existential threat, some patterns come to light. First, threats require a specific context that determines whether or not they are deemed existential against the referent object. Second, the state's elite actors must perceive the threat to be convincingly existential for the general public to accept it. This puts the objectivity of any given "existential threat" in question.[76] Does a threat have to be truly "existential," or is it only up to the interpretation of the

[73]Crick, "Drugs as an Existential Threat."
[74]Buzan et al., Security, 36.
[75]Buzan et al., *Security, 21*.
[76]Farrand and Rizzi, "There Is No (Legal) Alternative."

elite state actor? For this thesis, this question can be sufficiently answered using Buzan et al's theory supplemented by previous applications of this question.

Given the subjective nature of determining an 'existential threat,' the actuality of the threat is not necessary for securitization. It only needs to be an existential threat as interpreted by the determining actor and handled in a manner supported by the general public. This follows previous interpretations of crisis identification. As stated by Benjamin Farrand and Marco Rizzi, the threat and actions thereafter are " ultimately interpreted and then communicated in terms of the underlying ideological position of the actors constructing the narrative."[77] For the case of securitization of *Energiewende*, the necessary requirements were met, meaning securitization proceeded regardless of the objectivity of the existential threat towards energy suppliers and consumers.

Given the existence of various interpretations of crisis and threat identification within the literature, it is important to align this case within a scholarly context. Political crises can broadly be organized into three groups: objective, subjective, and interpretive. While many may argue that the cut off of a large portion of energy supply is enough to fall within an objective framing, it disregards the speech act and audience acceptance required within securitization theory, which are both inherently reliant on the perspective of the respective parties. Considering that the two conditions necessary for securitization to occur are up to the actor's interpretation, this case would align under a subjective framework. However, securitization within the context of energy calls for an existential threat to be related to a scarcity of supply. This condition is not difficult to obtain, as nations struggle with a scarcity of energy supply more often than an object will go through securitization. Thus, the relevant actors must frame the scarcity — an objective event —

[77]Farrand and Rizzi, "There Is No (Legal) Alternative.", 9.

as an existential threat in order to begin the process of securitization. Therefore, an existential threat within this case would be best described with an interpretive framework.

The Processes of Securitization

The foundation of Securitization theory is a spectrum from non-politicized to securitized. A non-politicized issue is just that: an issue in which public debate is never required and that the state does not deal with. The second level, politicization, references the majority of issues a state decides to handle. A politicized issue requires government allocation of time and resources, and may require public debate. When an issue is securitized, it is taken to a level above politicization, where the issue is no longer 'appropriate' to debate. There are two motivations for securitizing an issue. One motivation is to protect the referent object from the existential threat. The second motivation is to keep potential state vulnerabilities from being exposed by specifically addressing the existential threat. At this level, the issue is taken out of debate for the general public and is exempt from standard rules and procedures due to its heightened sensitivity.[78] This means actors can make quick decisions regarding this issue and do what is necessary to protect the referent object from the threat.

The process of securitization happens in three stages: 1. The existential threat is identified; 2. There is an emergency action protecting the referent object; and 3. The securitized issue is released from standard rules and procedures.[79] When an issue becomes securitized, it graduates the rhetoric that binds politics. Being above politics may mean that the issue becomes non-partisan, the way it is dealt with by the state structurally changes, or any other way a government may choose to gain control over the issue. Stages one and three are extremely case-specific, my analysis of these stages will take place in a further section of the conceptual

[78]Buzan et al., *Security*, 23.
[79]Buzan et al., *Security*, 26.

framework when the theory is applied to *Energiewende*. The following is the broad analysis of the second stage required to be substantially applied to *Energiewende*.

The second step, emergency action, requires a 'speech act'.[80] In political securitization, a speech act is performed by a member of the political elite (often a nation's leader or top official) and acts as the moment in which the issue is proposed to become securitized. Not only is a speech act a way of communicating information, it is a performance. A speech act communicates the new status of the issue and sets the tone for the way in which the issue will be addressed in the future if or when it becomes securitized. Emergency action is not complete with a speech act; it must be accepted. As Buzan et al. say, "an [issue] is only securitized when the audience accepts it as such." [81] For a state actor, the audience is almost always the domestic general public and constituents. While international actors may act as the audience, their acceptance of the securitization holds lower significance because they are not being represented by the decisions of the government.

The necessity for securitization to be approved by the general public may seem hypocritical considering securitization will take the issue out of public debate. However, there is one important factor to consider. The threatening nature of a securitized issue may make the public more supportive of a state's actions than they otherwise would be. Because the securitized status of the issue was approved by the audience, they believe the issue should be dealt with differently than a politicized issue. For example, if a terrorist attack (a securitized issue) was committed against a hypothetical nation, the general public would be more likely to support retaliation from the state even though the general public did not directly make that decision.

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[81] Buzan et al., *Security*, 25.

Securitization in Energy Studies

The Progress and Result of Energy Securitization

Scholarship has integrated Securitization theory into the field of energy studies. For energy studies, a referent object most often refers to a reliable and affordable energy supply for consumers. Therefore, a threat to that supply would generally be considered existential if it made energy unreliable and unaffordable.[82] The details of this threat could take various forms depending on the type of energy, the energy's supplier, location, time, and other factors. However, at its foundation, an existential threat usually involves disruption and/or scarcity in energy supply.[83] Considering an energy issue may be securitized only if there is an existential threat, infrastructure and supply strategy must be appropriately responded to after a threat is identified. This is particularly notable because if a political actor tries to securitize an energy issue without appropriate action toward changing the supply strategy, it would not be considered successful securitization within this theory.

Scholars integrating securitization into energy studies have key notes regarding the second stage of securitization, declaration and deployment of an emergency action. According to these scholars, a speech act must come in the form of a declaration to the public and include the requisite infrastructural and supply strategy changes.[84] Public approval must be ongoing, considering changing energy systems is a complex and often lengthy process. The process of securitization will be "flawless" as long as mitigation measures are put in place and the audience accepts the threat as genuine. [85]

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[82]Yergin, "Energy Security in the 1990s."
[83]Ramadhan, "The Securitization of Energy Issues from The Perspective of Security Studies."
[84]Ramadhan, "The Securitization of Energy Issues from The Perspective of Security Studies."
[85]Ramadhan, "The Securitization of Energy Issues from The Perspective of Security Studies.", 11.

The concept of energy security and the application of Securitization theory in energy studies have different origins. Although they developed separately, they are compatible with each other. This is illustrated by the process of securitizing energy issues. Once an energy supply has been securitized, it acts as an equivalent to the general concept of energy security. Daniel Yergin defines energy security as assuring "reliable, adequate supplies of energy at reasonable prices and in ways that do not jeopardize major national objectives and values." [86] This definition was used within energy studies before Securitization theory was applied to the field, yet it fits well within the theory's scope. A reliable and adequate supply of energy is free of disruption and shortage, which fundamentally supports both the application of Securitization theory and the general concept of energy security.

The Role of Renewable Energy Sources in Energy Security

Renewable energy has increasingly made more sense to implement in order to achieve energy security. This is true for many reasons, including diversity of supply, increased affordability, and, in some cases, promoting domestic production of energy. In order to achieve the goal of energy security, it is recommended to have a diverse energy supply.[87] Renewable Energy Sources (RES) are diverse for a multitude of reasons. First, RES include solar, wind, geothermal, hydro, and biofuels. Investing in RES does not mean investing in one energy source, but rather investing in an arsenal of clean energy. Second, acquiring resources and technology for RES requires diverse trading partnerships and does not result in immediate energy consequences in the case of a resource shortage. Because the resources to develop clean energy are more spread out between trading partners, this makes the supply more secure.[88] For example, if there were a

[86]Yergin, "Energy Security in the 1990s."
[87]Yergin, "Ensuring Energy Security."
[88]Energy Security and The Green Transition.

shortage of cobalt for PV production, it would have no effect on the immediate energy supply of solar within a country and would only slow further development in PV technology. On the other hand, an LNG shortage would have immediate and severe consequences.

Another issue nations must consider when attempting to secure their energy supply is how fast a substitute can occur if one source is compromised. For example, if an LNG pipeline sustains unexpected damage, the country must be able to quickly shift to another source, whether it be more LNG or otherwise. Therefore, for a country to claim strong energy security, it must have the flexibility to quickly shift from one source to another in addition to a diverse range of sources.

RES is inherently compatible with energy security because of its affordability. RES comes at a "reasonable price,"[89] with its affordability being partially due to prior RES investments made by countries like Germany. The more a country invests in its renewable energy sector, the more affordable, and therefore secure, RES becomes. Although renewable energy production is not always the cheapest option, it is an increasingly affordable option for countries with prior RES investment.

Countries with few to no natural energy resources have started to implement RES as a security measure because of the security benefits of domestic energy production. Domestically produced energy is more secure than imported energy. For countries without natural energy resources, or countries that are attempting to move away from natural energy resources, renewable energy is one of the only paths towards energy security.

[89]Yergin, "Energy Security in the 1990s."

Securitization in *Energiewende*

To fit Securitization theory within the case of *Energiewende* post-invasion, every step of securitization must be identified within this specific context. Before energy supply was securitized in Germany, it was a politicized issue; the existence of *Energiewende* is evidence of this. It is important to note that even though *Energiewende* was a response to threats associated with climate change, it was not a securitized issue before Russia's invasion of Ukraine. As explained further in Chapter 3, no external shock to *Energiewende* was substantial enough to trigger the process of securitization before Russia's invasion.

Germany's actions after Russia's invasion can be described as securitization. Russia's going to war with an EU-aligned country threatened Germany's energy supply. Before the war, Russia was responsible for supplying fifty five percent of the LNG consumed in Germany at a time when LNG made up a quarter of domestic energy consumed.[90] Additionally, Russia supplied thirty five percent of Germany's oil, when oil made up thirty five percent of domestic energy consumed.[91] Therefore, the access and affordability of energy were at extreme risk following the invasion. An overnight cut off would act as an existential threat to the referent object of Germany's energy supply. This existential threat was quickly identified as energy supply disruptions were now anticipated.

Throughout this paper, it will become clear that *Energiewend*e went through the process of securitization after Russia invaded Ukraine in the Spring of 2022. In the following sections, this thesis will explain *Energiewende*'s securitization by identifying the precipitating speech act, highlighting the continuous acceptance of the threat among the public, and examining the removal of norms and past procedures for *Energiewende*.

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[90]Bundesnetzagentur, "Bundesnetzagentur - Press - Bundesnetzagentur Publishes Gas Supply Figures for 2022."
[91]Kędzierski, *Germany: How the Gas Sector Changed in the Crisis Year of 2022*, 2, fig 1.

Section II: Early *Energiewende* (2000-2011)

To highlight the unique response to Russia's invasion, the foundational motivations for *Energiewende* must be considered. This chapter will detail the contextual landscape of early renewable energy policies, as well as the earlier forms of *Energiewende*. *Energiewende* was undeniably a product of climate-conscious policymaking, whereas the main benefit of renewable energy is its carbon neutrality. Detailing the origin of early *Energiewende,* in particular EEG, and the development of subsequent policies illustrates the focus on the development of a renewable energy industry as an environmental policy with an economic deployment mechanism.

In particular, this chapter will span the timeframe between the conditions that led to the passage of EEG in 2000 to the months before the nuclear disaster in Fukushima, Japan, in March 2011. This chapter will explain the climate motivations of the EEG and *Energiewende*, the pre-Fukushima conversations around the role of nuclear energy, and the evolution of *Energiewende* from the Red-Green coalition to the Grand coalition. Through this analysis, the motivation of climate change mitigation becomes increasingly clear, therefore creating a juxtaposition to the securitized nature of modern day *Energiewende.* This will explain many of the complexities seen in modern-day *Energiewende*.

Environmentalism in the Red-Green Coalition

In 1998, the SPD and Green Party won the federal elections in a landslide, forming the Red-Green coalition of the early 2000s. [92][93] The chancellorship was filled by Gerhard Schroder,

[92]After reunification, the FRG Green Party merged with the GDR Alliance 90 to form the Alliance 90/Green Party. While that is the official name of the party, it is colloquially referred to as the Green Party. To align with literature, the Alliance 90/Green Party will be referred to as the Green Party and members as the Greens.
[93]Strek, "Ecopolitics in Modern Germany: The Rebirth of the Green Party," pt. 1.

and the Greens filled many top Minister positions, such as Environmental, Foreign, and Health, giving them more power than ever before.[94] At the time, Helmut Kohl, alongside the rest of the Christian Democratic Union (CDU) politicians, had declining popularity due to high unemployment and turmoil after reunification.[95] Thus, Germans turned over a new leaf by electing the furthest left parties into office.

While the SPD was the dominant Party in the coalition, many policies implemented during the Red-Green coalition had been Green Party platforms for decades. This includes the Ecological Tax Reform, nuclear phase-out, and comprehensive renewable energy transition legislation. The most pressing example is EEG, as it was written by Green Members of Parliament (MPs) during the Red-Green coalition.[96] Therefore, understanding Green Party platforms gives contextual background behind many Red-Green policies. Given their origin as environmental activists, Green Party platforms, particularly economic and energy policies, are environmental policies at their core. This framework provides context to many Green policies, such as the aforementioned examples, and helps illustrate the environmental motivations of *Energiewende*'s original form. While the Greens often used energy policy as an instrument for environmental protection, they were integrating other relevant issues into their repertoire: unemployment, reunification, and foreign relations.[97] This strategy — originally implemented in their 1998 campaign — would end up being vital to their impact in the Red-Green coalition.

[94]Strek, "Ecopolitics in Modern Germany: The Rebirth of the Green Party," pt. 1.
[95]Stelzenmüller, "Helmut Kohl."
[96]Fell, "About me."
[97]Strek, "Ecopolitics in Modern Germany: The Rebirth of the Green Party," pt. 1.

Policies of the Greens

Inspired by similar policies in Denmark and Sweden, the Greens supported an Ecological Tax Reform (or ecotax) program in Germany.[98] In concept, the ecotax adds the price of the natural resource extraction needed to produce to the final sale price of an item — in turn creating a "real ecological price" of its consumption.[99] This program took pre-existing taxes without environmental focuses and developed them to encompass environmental objectives.[100] In later renditions of the policy, a small portion of the revenue went into renewable energy R&D.[101] An ecotax combines environmental policy with other social policies, a common tactic of the Greens. This policy came to fruition shortly after the election when the law was passed in the Bundesrat.[102]

The foreign policy of the Greens was similar, as it was a combination of environmentalism and foreign policy. As the Greens themselves claimed, environmental issues were becoming "more and more a core subject of foreign policy." [103] The realist and fundamentalist sects within the Party disagreed on key foreign issues, making it difficult for them to gain credibility.[104] Many of these conflicts surrounded North Atlantic Treaty Organization (NATO) membership and Germany's support of Western ideology and allyship. This is partially linked with the Greens' anti-nuclear stance, as they are just as much against nuclear weapons as they are nuclear energy. Their anti-militarism and anti-nuclear ideologies led to the Green Foreign Minister Joschka Fischer's controversial support for a No First Use policy, where nations would agree to never begin a nuclear conflict, to be adopted by NATO.[105] The

[98]Strek, "Ecopolitics in Modern Germany: The Rebirth of the Green Party," pt. 1.
[99]Strek, "Ecopolitics in Modern Germany: The Rebirth of the Green Party," pt. 1.
[100]Beuermann and Santarius, "Ecological Tax Reform in Germany."
[101]Beuermann and Santarius, "Ecological Tax Reform in Germany."
[102]Beuermann and Santarius, "Ecological Tax Reform in Germany."
[103]Hoffmann, "Der Pragmatiker."
[104]Kwidziński, "German Green Party."
[105]Franceschini, "The Greens and Nuclear Weapons.", 183.

fundamentalist sect of the Green Party, who were responsible for the more extreme anti-militaristic and anti-nuclear weapon stances, was skeptical of Western allies because of their staunch militarism and 'bourgeois democracy', causing a rift with the realist sect of the Party.[106] Regardless of their internal conflict, environmentalism was central to foreign and defense policy. When the Greens coalesced with the SPD, a pro-NATO and pro-Western allyship Party, they abandoned many of the aforementioned platforms. While Fischer ended up sticking with the precedent foreign policy, he often exclaimed the importance of environmentalism in foreign relations.[107]

The Greens and Nuclear Energy

To see the environmental themes in all Green Party policies, no example is more relevant than nuclear energy. While other major parties view nuclear energy as a practical and stable form of energy supply, the Greens were opposed to nuclear energy on multiple levels. First, they were opposed to the development of nuclear weapons. While this aspect of anti-nuclearism tended not to bleed into environmental politics, it emboldened the anti-nuclear as an energy stance among Green Party members. Second, the Greens argue that nuclear energy is worse than coal because of its ecological effects. In the 1990s, the Greens' stance was to use coal as a transition fuel as a way to avoid the implementation of nuclear energy.[108] To bridge the gap between environmentalism and energy policy, the Red-Green stance on nuclear must first be considered.

At its core, the anti-nuclear movement is an environmental movement. The qualms of anti-nuclear activists are often related to nuclear waste storage, a potential nuclear disaster, and the environmental impacts of development.[109] This movement has been prominent in Germany

[106]Wolf, "Party-Building for Eco-Socialists."
[107]Strek, "Ecopolitics in Modern Germany: The Rebirth of the Green Party," pt. 1, 53.
[108]Strek, "Ecopolitics in Modern Germany: The Rebirth of the Green Party," pt. 1.
[109]Milder, Greening Democracy.

since the 1970s, alongside the wave of progressive social movements. The "birthplace" of the anti-nuclear movement was at Wyhl, Baden-Württemberg, where 20,000-30,000 protestors occupied the construction site of a nuclear power plant.[110] After this demonstration, the anti-nuclear movement gained momentum — becoming an important part of the social opposition movements found in the FRG at the time.[111] In 1980, these individuals merged their smaller anti-nuclear groups to form the Green Party.[112] The Party, founded on 'ecological politics', kept anti-nuclear sentiments as a central aspect of their platform as the founders went from activists to politicians.

In the early 1980s, the Greens were the only party with an anti-nuclear consensus. This remained the case until the Chernobyl disaster in 1986, when the SPD joined the Greens in calling for a shutdown of nuclear plants in Germany.[113] Naturally, this meant that the 1998 Red-Green coalition desired anti-nuclear legislation. It is worth noting that the Greens had been against nuclear energy from the beginning because of the environmental and public health consequences. Further, they were less motivated by concerns for 'safety' because they were against nuclear power before any internationally known nuclear power plant disasters had occurred. The SPD only became anti-nuclear after a power plant disaster, implying their priority was safety.[114] Regardless of the main priority, the Red-Green coalition held a staunchly anti-nuclear stance.

[110]Schils, "Mass Occupation of Proposed Wyhl Nuclear Power Plant Site in Germany, 1974-1977."
[111]Mewes, "The West German Green Party."
[112]Mewes, "The West German Green Party."
[113]World Nucl. Assoc., "Nuclear Power in Germany - World Nuclear Association."
[114]Hansen, "The End of the SPD as We Knew It?"

Red-Green Platform

Considering the Red-Green coalition made rapid withdrawal from nuclear energy one of their main three priorities, it is without surprise that the government began working on a draft to limit the use of nuclear power almost immediately after entering office .[115] [116] Although there was a staunch anti-nuclear movement, nuclear energy powered nearly one third of all the electricity consumed in Germany in the late 1990s.[117] This tension dragged the phase-out negotiations for nearly eighteen months, finally reaching a deal in 2000. The phase-out deal was made between the major players in the nuclear industry and the government, which Schroder called "a sensible compromise." [118] This deal halted the construction of new nuclear power plants and allowed a thirty two year lifespan for the existing plants, meaning the newer plants — the newest of which were built in the 1980s — would halt operations around 2020.[119] The nuclear phase-out deal was approved only months after EEG was passed, meaning that this phase-out is often thought of in tandem with EEG as the beginning of *Energiewende*. For the Greens and other phase-out supporters, the RES implemented in EEG was partially a way of replacing the energy lost by phasing out nuclear, further linking the two policies.[120]

The Red-Green coalition ran on a platform of environmentalism and made it a priority when they got into office. This laser focus was present in both parties, but was specifically present in the Greens, who had a tendency to bring ecological politics into every issue. The specific policies of the Greens are of central importance to understanding the rhetoric of the Red-Green coalition because of their various prestigious positions of Environmental Minister,

[115]Lees, "The Red‐green Coalition."
[116]World Nucl. Assoc., "Nuclear Power in Germany - World Nuclear Association."
[117]The Associated Press, "Germans Reach Deal to Phase Out Nuclear Energy."
[118]BBC News, "Germany Renounces Nuclear Power."
[119]The Associated Press, "Germans Reach Deal to Phase Out Nuclear Energy."
[120]Fell, "EEG-Novelle 2016 beendet deutsche Energiewende: Statt den Ausbau der Erneuerbaren Energien weiter zu drosseln brauchen wir ambitionierte Ausbauziele für 2030.", 13.

Foreign Minister, and Health Minister. This sets the backdrop to EEG, showing the commitment to sustainability through many issues. Taking nuclear as an example, a phase-out was being called for by environmental activists for decades. One of the ruling parties and the party of the Environmental Minister, the Green Party, had been founded on these environmentally-minded anti-nuclear sentiments. When they got to office, they were able to create an energy policy that was a product of years of environmental activism. Since environmentalism was the backbone of all Green Party politics, including nuclear policy, it can be said that environmentalism was the top consideration for *Energiewende*.

Path to *Energiewende*: EEG

EEG was the birth of *Energiewende*, setting its foundation with a focus on climate protection through economic feasibility. EEG is a landmark policy for a few reasons. First, it was the bridge between the old energy policy and *Energiewende.* EEG took former energy policies in Germany and refitted them to better support the RES industry. This was achieved mainly through FITs that were first introduced in Germany in the 1990s, but were not successful until EEG.[121] Second, it was the first time the German government had established a RES goal with a comprehensive guide as to how to achieve it. This investment set EEG up for success when it came to meeting goals, something they are still reaping benefits from today.[122] Finally, it would inspire future energy legislation both domestically and internationally. Future Bundestag legislatures would expand on EEG to make it even more ambitious, and other countries continue to use it as a blueprint policy — over sixty countries have implemented nearly identical policies

[121]Leiren and Reimer, "Historical Institutionalist Perspective on the Shift from Feed-in Tariffs towards Auctioning in German Renewable Energy Policy."
[122]Leiren and Reimer, "Historical Institutionalist Perspective on the Shift from Feed-in Tariffs towards Auctioning in German Renewable Energy Policy."

since 2000.[123] The following will be a guide for the "birth certificate" of *Energiewende*: EEG — providing background on its passage, content, larger impacts, and key takeaways of the EEG. [124]

EEG Background

EEG was written by Green Party MPs, the main architect being Hans-Josef Fell. Fell, known as the "father of the feed-in-tariff", originally joined the Green Party because they closely aligned with his anti-nuclear and pro-RES stances.[125] For Fell, drafting and advocating for EEG was purely environmentally motivated. In an interview regarding his role in the creation of EEG, "my main goal [of EEG] was to make climate protection economically lucrative." [126] This framing of the legislation implies that it was approached the same way as other policies, such as the ecotax. Integrating climate protection with economics through energy was a recurring approach for the Greens between EEG and the 2000 nuclear phase-out. Although the policy went through many rounds of debate and revision, the Greens and other EEG allies stood firm in their commitment to climate protection through clean energy.

Content of EEG

The EEG was passed by the Bundestag in February and the Bundesrat in March 2000, and was implemented in 2001. The preamble of the Act reads as follows:

"The purpose of this Act is to facilitate a sustainable development of energy supply in the interest of managing global warming and protecting the environment and to achieve a substantial increase in the percentage contribution made by renewable energy sources to power supply in

[123]Fell, "About me."
[124]Fell, "In: Parliamentary Record of Plenary Debate 14/91."
[125]Fell, "About me."
[126]Fell, "A Global Vision on Renewable Energy with Hans-Josef Fell."

order at least to double the share of renewable energy sources in total energy consumption by the year 2010, in keeping with the objectives defined by the European Union and by the Federal Republic of Germany." [127]

This makes the goals of EEG remarkably clear: climate protection through renewable energy implementation. As alluded to in the preamble, EEG and supplementary directives provided percentage goals to be met by the policy. In 2000, RES were responsible for only five percent of the total electrical supply.[128] The goal, doubling the share of RES in electrical supply by 2010, meant RES would have to supply a minimum of ten percent of the electrical grid. Additionally, EEG addressed another energy goal not directly outlined in the Act itself. At the third Conference of Parties (COP3), which produced the Kyoto Protocol, the EU announced a burden-sharing agreement where Germany would have to reduce domestic Greenhouse Gas Emissions (GHG) emissions by twenty one percent by 2010.[129] These goals could mostly be achieved in tandem, but an increase of five percent RES on the market would not be enough to reduce GHG emissions by twenty one percent. That means EEG had a secondary goal of reducing overall emissions.[130]

Feed-in Tariffs

EEG would achieve its goals, as well as setting up the infrastructure for further goals in the future, through refitting an existing policy mechanism — FITs. FITs work by the government signing long-term contracts with renewable energy suppliers and guaranteeing at or above market prices for that energy. As opposed to a competitive market-based approach, FITs allow

[127]Erneuerbareenergiengesetz (2000).
[128]Ember, "Germany."
[129]Marklund and Samakovlis, "What Is Driving the EU Burden-Sharing Agreement."
[130]Fell, "A Global Vision on Renewable Energy with Hans-Josef Fell."

new renewable energy suppliers to build capacity through government support. Prior to FITs, the government's financial support of the RES industry was only in R&D, and not in implementation. Therefore, it would be extremely risky for companies to invest in RES implementation and extremely costly for consumers; the FIT model solves for this.[131] Fell, an MP from the first German municipality to implement FITs, saw FITs as the only way to incentivize RES industry development.[132] When speaking to the usefulness of the scheme, he says FITs "enable the renewables' entry into the market and to scale them out on an industrial level." [133]

FITs were first implemented in Germany under StrEG in 1991, and they were the first European country to do so.[134] The FITs in StrEG brought limited success, as there were many structural issues with the deployment mechanisms. This includes RES production caps, unstable revenue for the producers, and tying RES to the at the time unstable energy market. However, StrEG FITs were different from other versions because they required no extra financial support from the government, a characteristic that would continue to EEG FITs.[135]

This attempt to bolster the RES industry acted as scaffolding to EEG and other soon-to-come *Energiewende* legislation. Although StrEG saw limited success, it was helpful for policymakers because it provided a legislative basis for future policies and it showed policymakers what did not work. It is easier to build on pre-existing legislation than to start from scratch. Through this process, and in order for FITs to be a better fit for the German market, EEG writers knew what should remain and what to modify. StrEG was the reason the FIT model could be successful in EEG.

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[131]Fell, "A Global Vision on Renewable Energy with Hans-Josef Fell."
[132]Fell, "About me."
[133]Fell, "A Global Vision on Renewable Energy with Hans-Josef Fell."
[134]Int. Energy Assoc., "Electricity Feed-In Law of 1991 ('Stromeinspeisungsgesetz')"
[135]Int. Energy Assoc., "Electricity Feed-In Law of 1991 ('Stromeinspeisungsgesetz')"

Impacts of EEG

The goal of EEG was to bolster the RES industry, and that is exactly what it did. Within the first decade of its existence, the RES industry went through an evolution. Companies found RES to be a viable and stable industry for investment. For example, the number of solar cell manufacturers in Germany went from two in 1996 to six in 2000.[136] Another example is the 100,000 Roofs Program, a temporary program implemented in EEG with the goal of getting 100,000 households to install solar panels.[137] This policy was extremely successful and started the trend of solar installations on households seen throughout the country today. There was also a policy where wind energy producers could qualify for government assistance based on the efficiency of their turbines.[138] These programs made RES attractive to both consumers and producers.

EEGs success is apparent through the energy mix. By the time the Red-Green coalition left office in 2005, they had already met their goal of doubling RES supply to ten percent — surpassing the goal outlined in the EEG preamble five years ahead of schedule. By 2010, RES made up nineteen percent of the overall energy mix — nearly tripling in ten years.[139] EEG did not just affect the RES industry, but the entirety of the energy sector. Naturally, the former prosperous coal industry was dissatisfied with the new focus on RES. Many organizations, including the Utilities Association and Federation of German Industry, argued the law was too burdensome for the industry and too costly for consumers.[140] EEG posed a major threat to

[136]Jacobsson and Lauber, "The Politics and Policy of Energy System Transformation—Explaining the German Diffusion of Renewable Energy Technology."
[137]Jacobsson and Lauber, "The Politics and Policy of Energy System Transformation—Explaining the German Diffusion of Renewable Energy Technology."
[138]Jacobsson and Lauber, "The Politics and Policy of Energy System Transformation—Explaining the German Diffusion of Renewable Energy Technology."
[139]World Econ. Forum, "Renewables Have Overtaken Coal as Germany's Main Energy Source.".
[140]Jacobsson and Lauber, "The Politics and Policy of Energy System Transformation—Explaining the German Diffusion of Renewable Energy Technology."

non-renewable industries, as no industry growth was projected after EEG was passed.[141] Overall, EEG impacted the entire energy sector by supporting RES and threatening all other industries, including coal and nuclear.

Overall, EEG, coupled with the nuclear phase-out, set *Energiewende* in motion. These policies set two precedents for *Energiewende* that hold to this day: nuclear divestment and RES industry support. Although the Red-Green anti-nuclear stance was a minority opinion at the time of the phase-out deal, it made *Energiewende* an anti-nuclear policy — a development that would not have transpired were any other parties in leadership. This was because of the environmental/anti-nuclear origin of the Greens and the safety concerns of the SPD, meaning that environmentalism was at the core of the nuclear phase-out, it was also central *Energiewende*.

In EEG, the climate protection motivation was clear from the preamble, "facilitate a sustainable development of energy supply in the interest of managing global warming and protecting the environment." [142] EEG protects the climate and environment through boosting RES, a relatively small industry at the time. To stimulate growth, EEG uses a FIT model to make RES investments more attractive to firms of all sizes, small enterprises, and homeowners. FITs, along with wind and solar subsidies in EEG, led to the tripling of the RES industry in ten years.

The transition of power and the Grand Coalition

The CDU won the chancellorship in 2005.[143] When forming a coalition, the CDU/CSU met with the Greens but could not find common ground, leading to a coalition with the SPD.

[141]Jacobsson and Lauber, "The Politics and Policy of Energy System Transformation—Explaining the German Diffusion of Renewable Energy Technology."
[142]Erneuerbareenergiengesetz (2000).
[143]Bundeswahlleiterin, "Bundestag Election 2005."

Together, the conservative and liberal parties would form the Grand coalition of the 2000s and 2010s, and would mark the beginning of the Merkel chancellorship.

In the Kohl government of the 1990s, Merkel served as the environmental minister. Under her tenure, she focused on environmental issues, conservation, and nuclear reactor safety.[144] In 1995, she presided over the first United Nations Climate Conference, held in Berlin.[145] A year later, Merkel was in charge of negotiations for the Kyoto Protocol, where Germany committed to reducing energy consumption by twenty one percent.[146] As previously mentioned, a goal of EEG was to implement energy goals created at the Kyoto Protocol. Despite Merkel's qualms with EEG, she had a track record of supporting RES and climate protection. Going into her chancellorship, all signs pointed to the continuation of an efficient *Energiewende* and thoughtful consideration of climate protection.[147] This suggests that all Merkel's changes to *Energiewende* policy would have a strong commitment to climate change similar to the SPD-Green coalition.

In Merkel's first term, 2005-2009, *Energiewende* gained international attention. This is through Merkel's international negotiations related to climate protection and renewable energy. In 2007, the EU released new energy goals in addition to those within the Kyoto Protocol. The EU Heads of State released a policy titled '20-20-20 by 2020': a plan that puts "Europe in a pioneer role", said Merkel during a speech announcing the plan.[148] This plan includes three goals for the EU to achieve by 2020: a reduction of GHG by twenty percent (as compared to 1990 levels); expand renewable energy production by twenty percent, in addition to a ten percent

[144]Britannica, "Angela Merkel."
[145]Britannica, "Angela Merkel."
[146]Clean Energy Wire, "The Story of 'Climate Chancellor' Angela Merkel."
[147]Leiren and Reimer, "Historical Institutionalist Perspective on the Shift from Feed-in Tariffs towards Auctioning in German Renewable Energy Policy."
[148]Alfter et al., "European Ambitions Hit a Wall of Carbon."

increase in renewable fuels; and increase energy efficiency by twenty percent.[149] Another international accomplishment was achieved in 2007 when Merkel attended the G8 Summit. At this Summit, Merkel's main goal was to set an expectation of post-Kyoto Protocol climate negotiations. The Protocol was set to expire in 2012, and climate protection had not been fully achieved. After Merkel led the climate negotiations for both of these international agreements, the German press began to dub her 'the climate chancellor', giving her credit for the progressive energy policy of the grand coalition.[150]

A few years later, in 2009, the Bundestag passed a swath of revisions to EEG. This rendition contained a new goal where thirty percent of electricity must be sourced from RES by 2030, the first time the legislation of EEG contained a numerical goal.[151]

In September of 2010, the Grand coalition put forth a comprehensive timeline for renewable energy deployment. This policy, which interestingly does not contain the term *Energiewende,* was called *Energiekonzept*, or Energy Concept.[152] According to the Energy Concept timeline, it would not be achieved until after 2050.[153] The Energy Concept contained goals that had been made in outside agreements but had not yet been ratified in *Energiewende* policy. For example, the twenty percent reduction in energy consumption by 2020 made in the 20-20-20 by 2020 plan made by EU leadership.[154] [155] Additionally, a plan for Germany to become carbon-neutral by 2050. It is noted in the energy concept that the plan should not be taken as a

[149]Clim. Policy Info Hub, "Overview of Climate Targets in Europe."
[150]Clean Energy Wire, "The Story of 'Climate Chancellor' Angela Merkel."
[151]Leiren and Reimer, "Historical Institutionalist Perspective on the Shift from Feed-in Tariffs towards Auctioning in German Renewable Energy Policy."
[152]Bundesministerium für Wirtschaft und Klimaschutz, "Energiekonzept für eine umweltschonende, zuverlässige und bezahlbare Energieversorgung."
[153]Bundesministerium für Wirtschaft und Klimaschutz, "Energiekonzept für eine umweltschonende, zuverlässige und bezahlbare Energieversorgung."
[154]Bundesministerium für Wirtschaft und Klimaschutz, "Energiekonzept für eine umweltschonende, zuverlässige und bezahlbare Energieversorgung."
[155]Bundesministerium für Wirtschaft und Klimaschutz, "Energiekonzept für eine umweltschonende, zuverlässige und bezahlbare Energieversorgung."

forecast, but instead as a guiding compass. It is not about where they are going, but about where they can go. Overall, the goals in energy concept can be broken into two categories: energy reduction and renewable energy deployment.

Reduction of primary energy consumption as compared to 2008 levels	
Year	Percent
2020	20%
2050	50%

Source: BMWE

Total GHG emissions reduction as compared to 1990s level	
Year	Percent
2020	40%
2050	80%

Source: BMWE

As shown above, the energy concept has goals for both the reduction of primary energy consumption and total greenhouse gas emissions. By 2020, the country will need to eliminate twenty percent of its primary energy consumption in order to reduce its total GHG emissions by forty percent. By 2050, they will need to eliminate fifty percent of their energy consumption to reduce their GHG emissions by eighty percent. In order to achieve this, energy-efficient sources must be deployed at higher rates as well as a general reduction in energy use. While this concept was widely accepted in *Energiewende*, the energy concept was the first place it was outlined in detail.

Electricity share powered by renewable energy sources	
Year	Percent
2030	50%
2050	80%

As previously stated, this is the first time *Energiewende* has had strict deadlines assigned. Prior to the energy concept, *Energiewende* used vague language to speak about the rate of RES deployment. Strict numerical goals were indicative of and formative for the Merkel era of *Energiewende,* as seen through the energy concept, 20-20-20 by 2020, and the quantitative focus of her rhetoric.

Nuclear lifetime extension

On September sixth of 2010, Merkel announced a lifetime extension for nuclear power plants in Germany. This plan would have older plants' lifetime extended by eight years and newer plants extended by twelve years later than the Red-Green phaseout.[156] In the speech to announce the plan, Merkel called the extension a way to keep Germany at the forefront of clean energy policy.[157] This is consistent with Merkel and her party's opinion on nuclear energy being a bridging technology, a carbon-neutral tool used to transition towards renewables.[158] Naturally, with the divisive nature of nuclear energy in Germany, this decision sparked protests in Berlin following the announcement.[159]

The nuclear lifetime extension will help with the rollout of RES.[160] Along with the extension, the coalition announced that each nuclear reactor will pay nine euros per megawatt hour produced to the development of renewable energy. Over time, the reactors will contribute hundreds of millions to RES expansion.[161]

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[156]Der Spiegel, "14 Years Longer Online."
[157]Connolly, "Germany Agrees to Extend Life of Nuclear Power Stations."
[158]Gross, "Energy U-Turn in Germany."
[159]Der Spiegel, "14 Years Longer Online."
[160]Connolly, "Germany Agrees to Extend Life of Nuclear Power Stations."
[161]Connolly, "Germany Agrees to Extend Life of Nuclear Power Stations."

Conclusion

The early days of *Energiewende* were characterized by bolstering the renewable energy industry in an attempt to make Germany a more climate-conscious country. The foundational legislation of *Energiewende*, EEG, was created by Green MPs and passed under the Red-Green coalition, a government known for its progressive environmental policy. EEG creators, politicians, and scholars alike are in consensus about the motivation of early *Energiewende* — reducing greenhouse gas emissions, divesting in nuclear energy, and creating a prosperous renewable energy industry.

To develop the RES industry, EEG included an upgrade to the FIT scheme to incentivize energy producers to invest in RES. The FIT system showcases its popularity by being implemented by many other European countries after its success, and growing the renewable energy sourced electricity from five percent to nearly twenty percent in ten years.[162] The success of EEG 2000 allowed for the development of *Energiewende* past the Red-Green coalition. When Merkel took office, Germany was put on the global stage for *Energiewende,* and the policy was expanded through the 20-20-20 by 2020 and other such policies. She quickly became a champion of renewable energy and other environmental policies, earning her the name "the climate chancellor."[163] However, the era of early *Energiewende* ended when Merkel announced the nuclear lifetime extension, eliminating one of the original goals of *Energiewende* — nuclear divestment. This era transformed the RES from an infant to an adaptable industry ready for the turbulence it would soon endure.

[162]World Econ. Forum, "Renewables Have Overtaken Coal as Germany's Main Energy Source."
[163]Clean Energy Wire, "The Story of 'Climate Chancellor' Angela Merkel."

Section III: *Energiewende* in the 2010s (2011-2021)

This chapter will detail *Energiewende* between 2011 and 2021. This period of time bridged the early days of *Energiewende* to the modern version seen right before Russia invaded Ukraine. This time was characterized by the meltdown of the Fukushima Daiichi Nuclear Power Plant, hereafter the Fukushima disaster, new additions and changes to *Energiewende* policy, the COVID-19 pandemic, the construction of the controversial Nord Stream pipelines, and the end of the Merkel era. The following will explain the impact of these shocks, followed by the governmental and societal responses to the changes, supplemented by other notable changes in *Energiewende* policy and practice. Although the 2010s to early 2020s could be seen as a turbulent time for energy policy in Germany, no shock was great enough to trigger securitization of *Energiewende*, highlighting its precedent of adaptability. The attitudes and shifts to these shocks juxtapose the response to Russia's invasion by underlining the difference between simple reaction and emergency action.

Fukushima Fallout

The Fukushima disaster, also known as the triple disaster, was the result of a fifteen meter tall tsunami triggered by an earthquake in March 2011.[164] The Fukushima Daiichi Nuclear Power Plant contained six total core reactors, with reactors 1,2,3 operating on the day of the disaster. While none of the core reactors were negatively impacted by the 9.0 magnitude earthquake, the introduction of water into the reactor systems caused significant damage. The three operating

[164]"Fukushima Daiichi Accident - World Nuclear Association."

reactors experienced immediate damage from the tsunami, experiencing a three-day meltdown resulting in a significant release of radiation to the neighboring community. Following the meltdown, the surrounding community was evacuated from its damaged homes to avoid radiation exposure. In the days following the disaster, the Japanese government declared a state of emergency regarding its nuclear energy facilities. In total, three employees at the Nuclear Plant were killed by the meltdown; no one was killed from radiation exposure, and the earthquake and subsequent tsunami killed approximately 19,500 Japanese civilians.[165]

"Nuclear? No Thanks"

The tragedy of the Fukushima disaster drew international attention. March 2011 saw one of the largest waves of protests in the 2010s, with notable demonstrations spanning three continents.[166] The Fukushima disaster re-energized pre-existing nuclear skeptics as well as made new ones, as everyone began to reconsider the safety of nuclear energy. Within days of the disaster, Germany witnessed their largest anti-nuclear protest in history, with over 200,000 citizens taking to the streets in various cities across the country.[167] For reference, these demonstrations were ten times larger than those considered the birth of the German anti-nuclear movement in 1975 at Whyl, Baden-Württemburg.[168] In line with anti-nuclear demonstrations abroad, the German protests urged the government to reconsider the safety of nuclear energy. This rhetoric was particularly timely in Germany considering the lifeline given to the nuclear industry five months earlier. The protests reinvigorated the "Nuclear? No thanks" movement in Germany with the same call to action as before, a rapid nuclear phase-out.[169]

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[165]"Fukushima Daiichi Accident - World Nuclear Association."
[166]Hasegawa, "The Fukushima Nuclear Accident and Japan's Civil Society."
[167]Deutsche Welt, "Nuclear? No Thanks."
[168]Schils, "Mass Occupation of Proposed Wyhl Nuclear Power Plant Site in Germany, 1974-1977.".
[169]Deutsch Welle, "Nuclear? No Thanks."

Widespread protests were in line with larger shifting opinions on nuclear energy. In every G-20 country, nuclear energy skepticism and disapproval increased after the Fukushima disaster.[170] Seventy nine percent of Germans somewhat or strongly opposed the use of nuclear energy for electricity production three months after the Fukushima disaster.[171] Additionally, sixteen percent of Germans studied only developed a negative perception of nuclear energy after the Fukushima disaster.[172] Overall, the Fukushima disaster had a significantly negative consequence on the perception of nuclear energy internationally. The disaster also left Germans less trusting of their government in general. While anti-nuclear groups and parties, such as the Greens, identified this early on as a likely outcome, Germans did not flock to such groups. Instead, every party saw decreased popularity following the Fukushima disaster.[173] However, anti-nuclear parties saw smaller decreases than their counterparts — the Greens experienced less than half of the decline as the CDU.[174] The largest anti-nuclear protests in history, coupled with nearly eighty percent of the population opposing nuclear energy sent a clear message to the world and their government about the German stance on nuclear energy.

Government Response

At the time of the Fukushima disaster, Germany had seventeen nuclear stations that powered approximately twenty percent of the country's grid.[175] Although the nuclear reactors had been considered among the safest in the world, the Fukushima disaster called the safety of all nuclear energy into question, regardless of previous consideration. In response to concerns, Merkel announced a three-month “moratorium” on nuclear energy in a March 17th speech

[170]Ipsos, “Strong Global Opposition towards Nuclear Power | Ipsos.”, fig 2.
[171]Ipsos, “Strong Global Opposition towards Nuclear Power | Ipsos.”, fig 2.
[172]Ipsos, “Strong Global Opposition towards Nuclear Power | Ipsos.”, fig 3.
[173]Meyer and Schoen, “Avoiding Vote Loss by Changing Policy Positions.”
[174]Meyer and Schoen, “Avoiding Vote Loss by Changing Policy Positions.”
[175]Wettmann, “Germany’s Withdrawal from Nuclear Energy : Reasons and Strategies behind a New Energy Policy.”

addressing the Bundestag.[176] The moratorium encompassed two major actions: decommission of selected nuclear power plants and a stress test. The Federal Ministry for Nuclear Safety was to conduct rigorous examinations on all seventeen nuclear power plants, so-called stress tests. Following the stress-tests, *Bundesamt fur die Sicherheit der Nuklear Estorrung* (The Federal Ministry for the Safety of Nuclear Storage) hereafter BASE, would report findings and recommend future actions to ensure nuclear safety. The government announced the immediate shut down and decommission of all nuclear facilities built before 1980.[177] This applied to the six oldest facilities in the country. Interestingly, the original nuclear phase-out from the Red-Green coalition called for an immediate shut down of all nuclear facilities built before 1989. As Merkel points out in the announcement, this would apply to only one facility.[178] Merkel, a leader criticized for her lack of disapprobation on nuclear issues, implemented a harsher policy on nuclear issues than the coalition known for anti-nuclear policy.[179] Naturally, the moratorium suspended the December 2010 nuclear phase-out extension.[180]

After the three-month moratorium lapsed, the remaining nuclear facilities had passed the stress tests administered by BASE. Regardless of BASE's findings, the Bundestag requested an ethics commission to inform a nuclear phase-out to be convened.[181] A new nuclear phase-out plan was unanimously supported among MPs, as every party in Germany supported the eventual phase-out of nuclear energy. [182] More extreme anti-nuclear parties, like the Greens, called for an immediate shutdown of all nuclear facilities. Moderate parties, such as the CDU, viewed nuclear as a "bridging technology" towards clean energy, disapproving of nuclear in the long term.[183]

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[176]"German Chancellor Angela Merkel Speech to Bundestag on Nuclear Power."
[177]"German Chancellor Angela Merkel Speech to Bundestag on Nuclear Power."
[178]"German Chancellor Angela Merkel Speech to Bundestag on Nuclear Power."
[179]DW, "Phaseout Confirmed."
[180]Bundesamt Für Sicherh. Nukl. Entsorg., "Nuclear Phase-Out."
[181]Bundesamt Für Sicherh. Nukl. Entsorg., "Nuclear Phase-Out."
[182] cite
[183]"German Chancellor Angela Merkel Speech to Bundestag on Nuclear Power."

Furthermore, the CDU argued that a premature phase-out of nuclear energy could jeopardize a rapid transition to RES.[184] Despite these nuances, a rapid nuclear phase-out had unanimous support among Market Premium Schemes (MPS). When the ethics commission concluded its review, it found that a nuclear phase-out could realistically occur in ten years. Therefore, an amendment to the Atomic Energy Act for a phase-out by 2021was voted in 513-79.[185] The only party to vote no was The Left (*Die Linke*), who argued for an even quicker timeline.[186]

Lack of Evidence for Securitization in Nuclear Moratorium

The Fukushima disaster unequivocally changed the state of nuclear energy in Germany through a rapid disaffirmation of the previous extension. This switch-up is jarring for two separate, equally notable reasons. First, the moratorium is in direct contradiction to the nuclear phase-out extension administered only five months earlier. This is the only time to-date in *Energiewende* two antithetical policies were introduced in close proximity. Second, these policies were introduced under the same leadership. The nuclear moratorium stands out as a switch in nuclear policy, as well as a switch in Merkel's behavior towards nuclear. These reasons make the nuclear moratorium unusual. It signifies a new era for *Energiewende,* where nuclear phase-out is of central importance. Regardless of the uniqueness of the circumstances, these actions cannot be mistaken for securitization. The nuclear moratorium is simply the internalization of a geopolitical event. We see this to be the case because 1. The Fukushima disaster was not an existential threat to German energy 2. Merkel did not see the Fukushima disaster as an existential threat 3. The nuclear moratorium does not qualify as emergency action.

[184]Gründinger, “The Nuclear Phase-Out.”, 168.
[185]Bundesamt Für Sicherh. Nukl. Entsorg., “Nuclear Phase-Out.”
[186]DW, “Phaseout Confirmed.”

The international effects of the Fukushima disaster pale in comparison to the domestic effects Japan faced. The majority of international effects regarded the global market and trade impacts, as well as diplomatic considerations. In energy, the physical effects of the nuclear meltdown were entirely contained within Japan, as they were alone in dealing with the physical repercussions of their damaged energy supply.[187] The effects of the Fukushima disaster on international energy policy begin and end with the reconsideration of the safety of nuclear energy. For Germany, the reconsideration of the safety of nuclear energy manifested as widespread protests of pre-existing nuclear skeptics and newly concerned citizens, and reappearing pressure on the coalition government from fellow political parties.[188] Even though the disaster posed a significant threat, it was not a threat to those living in Germany. Because the only notable domestic repercussions were demonstrations, the Fukushima disaster put no additional pressure on the government than any other large-scale protest. Germany was not cleaning up radioactive waste, handling displaced citizens, or filling a large gap in their energy supply. Because the threat of the Fukushima disaster was never existential for Germany, a reaction was optional and did not require extraordinary measures.

Furthermore, as pointed out in the conceptual framework chapter, an 'existential threat' simply needs to seem existential to the political elite making the decision to securitize. In this case, the threat would need to be deemed existential to Chancellor Merkel. However, Merkel's reaction is not compatible with an elite actor identifying an existential threat. Merkel had a history of conveying her faith in the safety of nuclear energy, particularly German nuclear reactors. By training, Merkel was a quantum chemist, making her less susceptible to irrational fears around the source. Additionally, Merkel was in alignment with her party's consensus on

[187]Sato and Lyamzina, "Diversity of Concerns in Recovery after a Nuclear Accident."
[188]Dtsch. Welle, "Nuclear?"

nuclear energy acting as a bridging source between fossil fuels and renewables.[189] Given that Germany was in the midst of this transition, the CDU stance was that nuclear energy use was appropriate in 2011. Merkel had never swayed on these beliefs in the past, signifying a waver would be unlikely.[190] Not only did she never view nuclear energy as a threat in the past, her views did not change after the Fukushima disaster. According to insider accounts, Environmental Minister Röttgen and other coalition advisors were panicked by the reaction of the German public, and believed they ought to deliver a nuclear moratorium. In these conversations, Merkel pushed back, calling for a more thought-out response that considered the cost of a nuclear phaseout and the threat to her credibility a nuclear U-turn would cause. She was eventually pushed to move forward with the moratorium despite her skepticism about the plan.[191] If Merkel had seen nuclear energy as an existential threat to the German public, her reaction would have aligned more with "panic" exhibited by Minister Röttgen.[192]

When analyzing her reaction to the Fukushima disaster, there is more evidence that she did not deem this situation an existential threat. In her aforementioned speech to the Bundestag as well as in conversation with journalists, Ministers, and others, Merkel continued to reaffirm the safety of German nuclear reactors.[193] Although she willingly admits the Fukushima disaster made her reconsider their safety, reconsidering their safety falls short of identifying an existential threat. Moreover, Merkel's vocabulary does not align with an actor identifying an existential threat. Throughout the speech, she continuously called for a "reasonable", "sensible", and "sound" phase-out strategy for nuclear energy.[194]

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[189]Gründinger, "The Nuclear Phase-Out."
[190]Gross, "Energy U-Turn in Germany."
[191]Der Spiegel, "Out of Control."
[192]*Der Spiegel*, "Out of Control."
[193]"German Chancellor Angela Merkel Speech to Bundestag on Nuclear Power."
[194]"German Chancellor Angela Merkel Speech to Bundestag on Nuclear Power."

If energy was securitized because of the Fukushima disaster, Merkel's speech calling for a reasonable phase-out strategy would have been the speech act. As noted by securitization scholars, a speech act can be identified when "security becomes an act… not a routine practice." [195] Because government leadership did not think the Fukushima disaster posed an existential threat to German energy, the actions taken would not be deemed emergency action and a break from standard norms and procedures. All responses followed the standard channels: safety tests performed by BASE, a government-conveyed ethics commission to inform a reasonable timeline, and thoughtful debate regarding the amendment to the Atomic Energy Act. The amendment to the Atomic Energy Act includes a gradual phase-out over a ten year period, allowing other energy types to successfully replace nuclear energy.[196] This is a routine, reasonable action step after citizen pressure and new information.

Conclusion

The Fukushima disaster was a tragic flashpoint for international energy policy as it highlighted the insecurities of nuclear energy for the first time since Chernobyl. As Japan was reconstructed, the world saw some of the largest protests of the 2010s — igniting fears in previous skeptics and former supporters alike. Sticking with their reputation of anti-nuclear convictions, the largest protests outside of Japan were found in Germany. Every German city experienced large demonstrations in the days following the disaster, with protesters calling for nuclear abandonment.[197] The attitude switch on nuclear energy was not limited to civilians; the soft-on-nuclear parties shifted to views that more closely resemble that of the Reds and Greens.

[195]Huysmans, "What's in an Act?", 3.
[196]Vorschriftensammlung für die Sicherheitswirtschaft.
[197]Dtsch. Welle, "Nuclear?"

Only five months after the reversal of the Red-Green phase-out, the Grand coalition announced a new phase-out more comprehensive than that of the Red-Greens.

While this U-turn on nuclear energy was unexpected, the nuclear moratorium was not the securitization of *Energiewende*. The Fukushima disaster was not an existential threat to Germans, nor was it viewed as such. The nuclear moratorium fitted comfortably into the standard norms and procedures of a policy change, keeping it from becoming securitized. Despite the tragedy of the Fukushima disaster, nuclear energy remains a political issue in Germany.

Moving forward: New Amendments to EEG

Although there were many adjustments made to *Energiewende* in the 2010s, it cannot be called a troubled time. More accurately, this era is described as a transition from past relative simplicity to the modern *Energiewende* seen before it was securitized. As part of that transition, EEG underwent numerous changes throughout this period, yet all changes only contained a climate change mitigation motivation. The first renditions of EEG were meant to build a strong foundation for the renewable energy industry and encourage participation from large, medium, and small entities. In the 2010s, EEG was modified to sustain RES development without damaging the industry it had just created. The changes to EEG are a direct result of the performance of previous versions of the policy, and illustrate the success of *Energiewende* to this point.

Suffering from Success: EEG 2012

When MPS drafted the new EEG amendment in 2011, the proportion of RES in the energy mix reached a milestone. For the first time, RES made up over twenty percent of energy

production in Germany — up from only seven percent a little over a decade earlier. [198] [199] In addition to the increased share, total energy consumption declined significantly in 2011, marking an achievement in both major *Energiewende* goals. Considering RES made up twenty percent of the market, they no longer require protection from the market through FITs. While many in Germany made the argument that RES should switch to a market-based approach for this very reason, some RES supporters argued that this could threaten the diversity of the RES and slow their growth.

As a result of the debated maturity of the RES industry, the EEG 2012 contained a compromise between FITs and pure competition.[200] MPS was a middleman that cut benefits of FITs, but still gave RES producers above-market-rate prices. MPS provides renewable power plants operators an additional "bonus", or market premium, on top of their wholesale electricity price.[201] This policy had two main benefits *Energiewende* because it decreased the frequency of negative price spikes by seventy percent, and more closely tied prices to the market rate.[202]

The introduction of MPS did not completely replace FITs, as FIT policy is still found within EEG 2012.[203] However, MPS were the beginning of a transition to market-based approaches for RES expansion.

The EEG 2012 did not add any new numerical goals to *Energiewende*. Instead, it created new remuneration and premium rates so the energy concept goals could realistically be

[198] *Der Spiegel*, "14 Years Longer Online."
[199] Gawel and Strunz, "State Aid Dispute on Germany's Support for Renewables."
[200] IEA, "2012 Amendment of the Renewable Energy Sources Act (EEG 2012) – Policies."
[201] Frondel et al., "Market Premia for Renewables in Germany."
[202] Frondel et al., "Market Premia for Renewables in Germany."
[203] IEA, "2012 Amendment of the Renewable Energy Sources Act (EEG 2012) – Policies."

achieved.[204] The last numerical goals found in EEG itself were added in 2009, whereas they aimed for thirty percent of electricity to come from RES sources by 2030.[205]

'EEG 2.0': EEG 2014

The 2014 revision of EEG has been nicknamed EEG 2.0 for its remodel of RES expansion strategies and departure from previously successful, but increasingly outdated, mechanisms. The pressure to move away from the FIT system was coming to a head, leading up to the 2014 revision. Many were concerned about the rising costs of the transition, specifically the cost of the FITs. Environmental Minister Peter Altmaier calculated *Energiewende* could cost up to one trillion Euros by the early 2030s if it remains at the current rate.[206] The simplest way to lower the cost of *Energiewende* would be to abandon the FIT system. The rising cost, coupled with the pressure from the EU Commission and utilities companies on the verge of bankruptcy, EEG would need to reduce FITs and revise MPS — implying an overhaul of previous *Energiewende* mechanisms.

In the 2014 revision, FITs were limited to small installations only.[207] This still encourages decentralized systems and individual participation in *Energiewende* while saving billions. To stay in accordance with EU law, the green energy privilege was no longer available.[208] EEG 2014 introduced the auction system, sometimes translated as 'tenders', through a pilot program with PVs.[209] As the Bundestag planned a 2017 revision to EEG, they planned to include further details and large-scale implementation of the auction system.

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[204]IEA, "2012 Amendment of the Renewable Energy Sources Act (EEG 2012) – Policies."
[205]Leiren and Reimer, "Historical Institutionalist Perspective on the Shift from Feed-in Tariffs towards Auctioning in German Renewable Energy Policy."
[206]*Frankfurter Allgemeine*, "Umweltminister Altmaier."
[207]IEA, "2014 Amendment of the Renewable Energy Sources Act (EEG 2014) – Policies."
[208] Government source
[209]Appunn, "EEG Reform 2016 – Switching to Auctions for Renewables | Clean Energy Wire."

Deployment Corridor and Auctions: EEG 2017

The 2017 revisions implemented the ideas that were presented in EEG 2014. EEG 2017 included a new framework with a target range of new RES capacity for the upcoming years — the deployment corridor. The deployment corridor created smaller goals to supplement the larger decade-long goals found in previous versions of EEG. The deployment corridor allows more control for the rate of implementation of RES, as well as provides more opportunities for planning and security.[210]

Implemented alongside the deployment corridor was the auction system. A comprehensive auction system is described for onshore wind, solar, and biomass. Although each of the auction systems for each RES has unique qualities, the procedure is generally as follows: [211]

1. The auctions are run by the *Bundesnetzagentur*, or the Federal Network Agency of Electricity, Gas, Telecommunications, Post, and Railway, where they will call for tenders three to four times per year.
2. Producers can bid on a specific project and will operate under a pay-as-bid principle.
3. The lowest bids will be accepted until the capacity of the project has been reached.
4. Successful bidders will receive funding at the rate with which they won the bid for twenty years.

The auction system fits well with the deployment corridor because the Federal Network Agency has full control over the amount of RES being deployed in any given auction cycle. The

[210]Appunn, "EEG Reform 2016 – Switching to Auctions for Renewables | Clean Energy Wire."

[211]Appunn, "EEG Reform 2016 – Switching to Auctions for Renewables | Clean Energy Wire."

adoption of this system marks a shift in *Energiewende*, where the state is directly involved in energy transactions.

Introduction of the Offshore Wind Act

WindSeeG is a significant piece of legislation within *Energiewende.* First launched in 2017 alongside the EEG revisions, WindSeeG vastly accelerated the opportunities for the largely untapped offshore wind market. WindSeeG used the same auction system as EEG 2017, as the Grand Coalition thought the auction model would work particularly well with wind. Additionally, the nuclear moratorium inspired more RES deployment as all the energy provided by nuclear needed a replacement.[212]

The North Sea is home to an impressive portion of the world's wind farms. Despite its coastline on the North and Baltic Seas and commitment to renewable energy, offshore wind was a relatively untapped market in Germany.[213] In fact, Germany's first offshore wind farm was launched in 2010, ten years after the first wind farm located in the North Sea.[214] [215] Before WindSeeG, offshore wind was not comprehensively covered by any *Energiewende* legislation. There were no FITs available for offshore wind, and the main regulation was the Offshore Installations Ordinance. [216] The primary reason for RES expansion was EEG and FITs, so not being included left offshore wind development less developed than its RES counterparts.

[212]Fehling, "Comparative Perspectives on the Law of Energy Transitions in Europe."
[213] Wehrmann, "German Offshore Wind Power - Output, Business and Perspectives"
[214]*Blyth Offshore Wind Farm Marks 25-Year Milestone*.
[215]Alpha Ventus, "Überblick | Alpha Ventus."
[216]Fehling, "Comparative Perspectives on the Law of Energy Transitions in Europe."

Content

The preamble for WindSeeG begins with "the purpose of this act is to expand the use of offshore wind energy, particularly in the interest of protecting the climate and the environment." [217] This preamble resembles that of EEG: "The purpose of this Act is to facilitate a sustainable development of energy supply in the interest of managing global warming and protecting the environment." [218] Additionally, both go on to state the RES expansion goals of their respective Acts. For WindSeeG, that is to increase installed capacity to fifteen gigawatts by 2021-2030 — beginning with a modest goal like EEG 2000.[219] The similarities between WindSeeG and other *Energiewende* legislation suggest it has the same goals as the others. The purpose of WindSeeG is to expand RES capacity for climate change mitigation.

As WindSeeG uses the same auction system as EEG 2017, the mechanisms of deployment for offshore wind look like those of other RES. Therefore, the qualms of the tedious permitting and slow prices have also been applied to WindSeeG.[220]

Industry Repercussions

The auction system has been criticized for the amount of bureaucracy involved.[221] As previously mentioned, the auction system gives the state a more central role in individual energy installations. While this allows for more control, all the paperwork required has been criticized for stalling development. After EEG 2017, the average time to obtain a permit for wind was five years.[222] The comprehensive permitting and environmental impact assessments were created to

[217]Gesetz Zur Entwicklung Und Förderung Der Windenergie Auf See.
[218]Änderung von Ernuerebareenergiengesetz.
[219]Gesetz Zur Entwicklung Und Förderung Der Windenergie Auf See.
[220]Gesetz Zur Entwicklung Und Förderung Der Windenergie Auf See.
[221]Eddy, "German Business Is Tangled in Red Tape."
[222]*Is Bureaucracy Stalling the Energy Transition?*

ensure safe and ethical decisions were being made, but many bid winners argued they were slowing down the system.

Regardless of the increased bureaucracy in the auction system, renewable energy still saw expansion through this period. In 2015, renewables fueled thirty one percent of Germany's electricity; by early 2020, that number grew to forty one percent.[223] [224] Overall, the 2010s were a landmark decade for RES expansion. Between 2010 and 2020, RES went from supplying seventeen percent of electricity to forty one percent.[225] [226] Additionally, the Fukushima disaster had serious repercussions for nuclear energy. Between 2008 and 2018, nuclear energy saw a forty nine percent decrease in electricity generation. In 2018, nuclear accounted for eleven percent of the electricity supply.[227] At that point, they were on track for a complete phase-out by 2022 as outlined in the nuclear moratorium.

Energy Security? The Nord Stream Pipelines

The decision to construct a pipeline between Russia and Germany to supply gas to Europe has been one of the most consequential decisions for EU energy policy in the 21st century. The Nord Stream pipeline, Nord Stream I and II, respectively, are two parallel natural gas pipelines that run through the Baltic Sea from Vyborg, Russia, to Lubmin, Germany.[228] The original purpose of the Nord Stream pipelines was to strengthen the EU energy market through secure and cheap natural gas as supplied by Russia.[229] Since then, the Nord Stream pipelines have faced massive controversy and have led to international backlash, tariffs, and sabotage. This

[223]U.S. Energy Information Administration, "Germany's Renewables Electricity Generation Grows in 2015, but Coal Still Dominant.", fig 1.
[224]Renewable Energy Sources in Figures 2020, fig 3-6.
[225]Brockett, "Germany Says 17% of 2010 Power Consumption Was Met By Renewables."
[226]*Renewable Energy Sources in Figures 2020*, fig 3-6.
[227]International Energy Agency, *Germany 2020*.
[228]"Nord Stream AG."
[229]"Nord Stream AG."

section will detail the background of each pipeline respectively, followed by an overview of the benefits of the pipelines and the common criticisms they face. To fit Nord Stream into the themes of this thesis, this section will conclude with an analysis of the role of the pipelines in energy security and *Energiewende*. Considering the Nord Stream pipelines took center stage when Russia invaded Ukraine, they are of central importance to the arguments of energy security and *Energiewende*.

A Brief History of the Nord Stream Pipelines

In the 1980s, Russia desired to build a gas pipeline to Europe to ensure a steady customer, and Europe was looking to diversify routes.[230] The only issue with this potential partnership was where to lay a pipeline. Russia distrusted many Eastern European countries, such as Poland and Ukraine, due to resentment over Soviet and/or Russian control. Naturally, Russia believed it to be unwise to build a pipeline directly through nations where the risk of sabotage may be higher.[231] This, coupled with the possibility of large transport fees, caused the Kremlin and Berlin to discuss routes directly from Russia to Germany. In 2005, the route through the Baltic Sea was officially chosen.[232] Gerhard Schroder, German Chancellor from 1998-2005, was instrumental in the planning and approval of Nord Stream I. Schroder has been criticised for his affection towards Russia and Vladimir Putin, and the Nord Stream project has been called "a baby of [their] special friendship." [233] [234] The construction of the pipeline was completed in the summer of 2011 and was in service for eleven years.[235]

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[230]Högselius, "The Rise and Fall of the Nord Stream Pipeline."
[231]Högselius, "The Rise and Fall of the Nord Stream Pipeline."
[232]Knight, "The History of Nord Stream."
[233]Knight, "The History of Nord Stream."
[234]Pieper, "Putin and Schröder."
[235]"Nord Stream AG."

The second Nord Stream pipeline, announced in 2015, finally finished construction in 2021 after significant delays due to tariffs and the pandemic.[236] Nord Stream II, built alongside Nord Stream I in the Baltic Sea, was made to double the capacity of gas transportation between Russia and Germany. In an era of expensive energy due to *Energiewende* policy, Germany was desperate for cheap and reliable energy. A study conducted as a part of Nord Stream II planning found the pipeline could reduce wholesale gas prices by thirteen to thirty two percent in Europe.[237] Together, the Nord Stream I and II have a capacity of over fifty five billion cubic meters of natural gas per annum.[238]

Benefits and criticisms of the pipelines

As previously mentioned, the purpose of the pipelines was to mutually benefit Russia and the EU. It has been strongly emphasized by Germany, Russia, and Gazprom that the pipeline will ensure energy security for Europe, making it a worthwhile and safe investment. Simply, Russia gets a reliable customer and the EU gets inexpensive gas. However, there were other benefits to the project for both parties. First, Nord Stream was an opportunity to bolster the EU energy market. Proponents thought Nord Stream would boost the economy and energy sector in Germany by expanding commercial gas opportunities.[239] EU energy companies were already benefitting from Nord Stream, as five EU energy companies were included in the planning and construction of the pipeline. Second, in an era of expensive energy, Nord Stream would bring down energy costs for consumers. As previously mentioned, the pipeline could reduce wholesale gas prices by thirteen to thirty two percent in Europe.[240] Finally, Nord Stream would not

[236]Soldatkin, "Russia Completes Nord Stream 2 Construction, Gas Flows yet to Start."
[237]Russell, *The Nord Stream 2 Pipeline*.
[238]"Nord Stream AG."
[239]Sziklai et al., "The Impact of Nord Stream 2 on the European Gas Market Bargaining Positions."
[240]Russell, The Nord Stream 2 Pipeline.

jeopardize the EU's clean energy ambitions. The gas transported through Nord Stream burns significantly cleaner than other fossil fuels — emitting at least twenty five percent less carbon than its counterparts.[241] Considering Europe did not yet have the capacity to be completely powered by RES, many saw the gas supplied by Nord Stream as a transition fuel between dirtier fossil fuels and carbon neutrality — similar to sentiments regarding nuclear energy.[242]

Criticisms of the Nord Stream project fall into three main categories: decarbonization, Eastern European interests, and further reliance on Russia. Although proponents claim gas is a transition fuel, staunch environmentalists argue that Nord Stream ensured gas would be used for longer than government officials claimed. The opponents claimed that a project that costs nearly seven and a half billion Euros is too large an investment to only be used temporarily.[243] As previously mentioned, Germany aimed to be fully powered by RES before 2045.[244] That suggests Nord Stream II would only be operational for about twenty five years at the maximum, making the cost per year quite high. This argument continued that the German government will be reluctant to stop using Nord Stream as an LNG terminal, therefore delaying the 2045 goal.[245]

The second criticism of Nord Stream comes from a consideration of Eastern European interests — particularly, Poland and Ukraine. Both the Polish and Ukrainian governments were outspoken about their dissatisfaction with the project. The former Prime Minister of Poland called the Nord Stream a "geopolitical weapon of Russia" that jeopardized Eastern European interests.[246] While there are a myriad of reasons the countries believed this, they mainly relate to

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[241] EIA FAQ
[242]Russell, The Nord Stream 2 Pipeline.
[243]"Nord Stream AG."
[244]Federal Ministry for Economic Affairs and Climate Action, "The Climate-Neutral Federal Administration Coordination Office (KKB)."
[245]Russell, *The Nord Stream 2 Pipeline*.
[246] "The success of Ukraine depends on the success of new Government, says Volodymyr Groysman," Government portal, 28Sydoruk et al., "Nord Stream 2 as a Threat to National Interests of Poland and Ukraine." August, 2019, https://www.kmu.gov.ua/en/news/volodimir-grojsman-vid-uspihu-roboti-novogo-uryadu-zalezhit-uspih-vsiyeyi-krayini.

the 2012 annexation of Crimea. The EU imposed sanctions on Russia following the annexation. However, some argued that the construction of the Nord Stream pipeline may have jeopardized the sanction policy. The argument continued that revenue from the project was used to fund the war machine against Ukraine.[247] Naturally, Ukrainians deduced that further business with Russia threatens Ukrainian sovereignty and security, juxtaposing the intended security purposes of the project.[248]

Due to proximity and connection between the countries, national security concerns for Ukraine were national security concerns for Poland. Additionally, Poland had economic reasons to oppose the project. Poland has attempted to balance independence from Russian gas with European energy security for the last few decades.[249] At the time of Nord Stream II construction, Poland announced it would refuse to import any more Russian gas, but would still allow gas to be transported through the Yamal-Europe pipeline running through the country.[250] With the announcement of Nord Stream II, Gazprom (the company responsible for both the Yamal-Europe pipeline and Nord Stream) will redirect gas from Yamal-Europe to Nord Stream II, creating massive revenue loss for Polish energy companies.[251] Second, Poland requires support from the EU for further development. When Brussels and Warsaw are divided on an issue, that may jeopardize the development opportunities for Poland, leading to further economic misfortune.

Finally, the main criticism of the Nord Stream pipelines is that it will make the EU, specifically Germany, further reliant on Russia. Broadly speaking, the main harms of Russian dependence are 1. It gives Russia leverage in German politics and could impact decision-making, making Germany softer on Russia than it otherwise would be 2. It could put millions of

[247]Sydoruk et al., "Nord Stream 2 as a Threat to National Interests of Poland and Ukraine."
[248]Sydoruk et al., "Nord Stream 2 as a Threat to National Interests of Poland and Ukraine."
[249]Sydoruk et al., "Nord Stream 2 as a Threat to National Interests of Poland and Ukraine."
[250]Sydoruk et al., "Nord Stream 2 as a Threat to National Interests of Poland and Ukraine."
[251]Sydoruk et al., "Nord Stream 2 as a Threat to National Interests of Poland and Ukraine."

households at risk if there were to be a shut-off. Additionally, Ukraine was concerned that the new pipeline may weaken European sanction policies regarding the annexation of Crimea.[252]

In regard to a potential shutdown, Nord Stream had the potential to supply up to twenty six million EU households with gas.[253] This jeopardized twenty six million households in the event of a turn off. This claim was not unfounded, as Russia had a history of shutting off pipelines after disagreements and conflict with customers.[254] By the time of Nord Stream II, Germany was beginning to be alone in their support of the project. Even the EU began to worry about Russian dependence. Nine EU member states were strongly opposed, saying the pipeline threatens their security. The European Parliament agreed by passing a resolution in 2019 stating: "Nord Stream 2 reinforces EU dependency on Russian gas supplies, threatens the EU internal market and is not in line with EU energy policy or its strategic interests, and therefore needs to be stopped." [255] Considering the EU was supposed to be the beneficiary of the project, their disapproval sent a strong signal to proponents.

The US strongly opposes the Nord Stream pipelines for many of the aforementioned reasons. They were concerned regarding the autonomy of Eastern Europe, as well as increased dependency on Russia, especially given the unpredictability of Russia's actions. However, the main reason for the disdain for Nord Stream among US politicians is because of the soft power the pipeline gives Russia. Not only do the Nord Stream pipelines give Russia a guaranteed customer and easier access to its largest consumer base, it makes US allies, including Germany, align further with Russian interests.[256] For example, US President Donald Trump has claimed Nord Stream turns Europe into "a hostage of Russia." [257] While the US is concerned over the

[252]Sydoruk et al., "Nord Stream 2 as a Threat to National Interests of Poland and Ukraine."
[253]"Nord Stream AG."
[254]Haslam, "A Pipeline Runs Through It.", 76.
[255]State of EU-Russia Political Relations.
[256]Belkin et al., *Russia's Nord Stream 2 Natural Gas Pipeline to Germany Halted*.
[257]*New York Times*, "Nord Stream 2."

security threats the pipeline poses to Europe, many US politicians claim that this indirectly impacts the security of the US. Additionally, if Russia is filling the gap of supplying the EU with energy, the US' opportunity to supply is further diminished.[258] While US politicians claim their opposition comes mainly from concerns over their allies' safety, some claim the reasons may be more deeply tied to the latter reason.

Because the US has nonpartisan opposition to Nord Stream, many administrations have taken action against the pipelines. The pipelines have been condemned by President Obama, President Trump, and President Biden while in office, and Trump and Biden both imposed sanctions on the construction of Nord Stream II. They were moderately successful, as the construction was delayed due to the sanctions.[259]

Nord Stream, *Energiewende,* and Energy Security

Even though a common argument for Nord Stream is the relative cleanliness of gas, the pipelines are still supplying fossil fuels to Germany. Because *Energiewende* relates to the transition away from fossil fuels and toward renewables, Nord Stream is not considered to be *Energiewende* policy. While Nord Stream is not *Energiewende* policy itself, it greatly affects the status of renewable energy in Germany. The two aforementioned intersections between Nord Stream and *Energiewende* are 1. The construction of Nord Stream II was spurred by the need for inexpensive energy due to *Energiewende* policy 2. Critics argue large investment in fossil fuels jeopardizes the likelihood of achieving RES goals. Therefore, the success of Nord Stream has always had direct consequences for the rollout of renewable energy.

As argued throughout this thesis, renewable energy deployment had only been under the rhetorical umbrella of climate change before Russia invaded Ukraine, at which point security

[258]*New York Times*, "Nord Stream 2."
[259]Pifer, *Nord Stream 2: Background, Objectives, and Possible Outcomes*.

was introduced as a secondary motivation. The conversation around Nord Stream further strengthens this argument. Proponents of Nord Stream argue that it will strengthen energy security by providing inexpensive energy consistently. Critics argue that Nord Stream threatened the national security of Eastern Europe and the autonomy of the EU, specifically Germany. Similar to other European contexts, energy security was both secured through and mainly concerned with Russia.[260] Therefore, there was not a lack of concern regarding energy security in Germany before the securitization of *Energiewende,* it had simply not yet been applied to renewable energy. Additionally, the environmental benefits of using gas as opposed to other fossil fuels do not mean Nord Stream was a climate protection policy — it was just an added justification for the project. This justification meant Germany could construct Nord Stream without directly contradicting *Energiewende.* This suggests that both conversations around energy security and climate protection were occurring in Germany, but they did not overlap. This further highlights the uniqueness of the post-invasion response, as it was the first time energy security and climate protection synergized.

Separately, Nord Stream within itself contains an interesting discussion of energy security, where both the proponents and opponents of Nord Stream justify their position with energy security. Proponents see the Nord Stream pipelines as a way to obtain cheap and reliable energy, thus achieving a secure energy source. On the other hand, opponents argue that Nord Stream makes Germany further dependent on Russia and more dependent, leaving it at risk. The conversation of energy security between the critics and supporters of Nord Stream illustrates the subjectivity of the concept and the various ways energy security could be implemented within policies.

[260]Maltby and Mišík, *Energy Transitions in Central and Eastern Europe*.

Transition of Power

At the end of 2021, the SPD won the federal elections, opening up the opportunity for a new chancellor. Merkel's Finance Minister, Olaf Scholz, would take office as the next Chancellor after forming a coalition with the Greens and Free Democrats, called the Stoplight coalition.[261] The end of the Merkel era of German politics caused anxiety for many domestic and international allies. By the end of her sixteen year long leadership, she was seen as an unofficial leader of the EU, led Germany and the EU out of a financial crisis, and was a champion for many domestic issues, one of which was *Energiewende*. Even though the precise beginning of *Energiewende* is debated, many consider the Merkel era to have been the most progressive time for the energy transition, earning her "the climate chancellor" nickname.[262] Regardless of the shoes to fill, the new Stoplight coalition was determined to make climate protection, thus energy policy, a key priority.

In the coalition deal, Scholz agreed to ambitious measures to expand RES, such as a new focus on green hydrogen fuel and dedicating two percent of German territory to wind farms. He also agreed to a coal phaseout by 2030, eight years earlier than the pre-existing aim. Scholz's government planned to use the updates to *Energiewende* — the auction system, WindSeeG, and the Climate Protection Act — to help reach their new goals.[263] The last time the SPD and Greens were in charge of the government, EEG and the original nuclear phaseout were born. Scholz's government desired a lasting legacy similar to the past coalition.

[261] *BBC*, "Germany's Olaf Scholz Takes over from Merkel as Chancellor."
[262] Amelang et al., "Building the New Government That Must Put Germany on Track for 2045 Climate Neutrality."
[263] Amelang et al., "Building the New Government That Must Put Germany on Track for 2045 Climate Neutrality."

Conclusion

Energiewende underwent a transition period in the 2010s. This includes revisions to their nuclear policy, the switch to the auction system, deepening their reliance on Russia, and a transition of power from the Grand coalition to the Stoplight coalition. The most significant changes made during this time were the nuclear moratorium and the switch to the auction system from FITs. The former was a shock substantial enough to create a policy change but not act as an existential threat, thus falling short of securitization. The latter created greater friction between the government and RES producers, as RES deployment was becoming harder to achieve. While these changes created imprints still significant enough to see today, *Energiewende* was solely motivated by climate change throughout it all. This highlights the adaptability of *Energiewende* and the stark difference to the developments following Russia's invasion of Ukraine, where emergency action was taken.

Section IV: *Energiewende's* securitization & acceleration (2022-2024)

This chapter will detail the events leading up to, during, and following Russia's invasion of Ukraine from the perspective of German energy policy. It will begin with an explanation of the most notable events in 2022, from Russia's invasion of Ukraine on February 24th to the full cut off of Russian energy to Germany in September, describing the actions taken by the German government at each step. After the timeline has been established, the analysis section will examine the actions taken by the German government through multiple lenses, including through the framework of securitization. It is important to understand the events and the subsequent actions taken by the German government to illustrate the urgency in which the nation was forced to act. The behavior of the government cannot be analyzed before the chronology is understood. The later sections of this chapter will be divided into various arguments: 1. The legislative and discursive shifts that took place in German energy policy following February 2022, 2. Germany's reaction through the lens of securitization 3. The acceleration of *Energiewende* thereafter. These will culminate in a broader discussion of the connection of securitization and the acceleration of *Energiewende* and will conclude with a discussion of current-day German energy policy.

Energy Through War: A Timeline of Events

This section provides a brief timeline of the most notable events and actions surrounding Russia's invasion, as well as German and EU reactions to the military aggression and energy concerns. The timeline roughly stretches from February 2022 to September 2022 — the time between the official invasion to the complete cut off of Russian gas. Although this section does

not contain any analysis, it provides important context for the future analysis of these actions. Most notably, the speed at which Germany reacted to Russian aggression and had to adapt to keep the energy supply secure. An analysis of these events — and how they contribute to securitization and acceleration — will be detailed in further sections of this chapter.

February 2022

After months of threats and moving troops to the border, Russia announced "a special military operation" in Ukraine on February 24th, 2022.[264] Russian troops crossed the border into eastern Ukraine, beginning their assault in the cities of Kherson, Mariupol, Kyiv, and other areas in eastern Ukraine. This invasion would mark the beginning of the first major war in Europe since the establishment of NATO and the EU.

Three days following the invasion, on February 27th, Chancellor Scholz gave an address to the Bundestag reacting to Russia's aggression. This speech, called *Zeitenwende* (translating to time-turn, meaning turning point), would set the stage for Germany's energy, security, and economic policies for the duration of the Russo-Ukrainian War. Specifically, this speech announced numerous sanctions, bolstering the military and NATO presence in Eastern Europe, and numerous new energy projects.[265] Shortly after the speech, the government released a draft paper saying they will aim to be one hundred percent powered by renewables by 2035. This put a more specific and ambitious number to their previous goal of being completely powered by renewables "well before 2040." [266]

[264]Walker, Conflict in Ukraine: A Timeline (Current Conflict, 2022-Present).
[265]Scholz, "Policy Statement by Olaf Scholz, Chancellor of the Federal Republic of Germany and Member of the German Bundestag, 27 February 2022 in Berlin."
[266]German Energy To Be 100% Renewable By 2035.

The energy policy announced in *Zeitenwende* mainly concerns building up fossil fuel storage and accelerating renewable energy.[267] The former is focused on a short-term solution, making it through the 2022-2023 winter, while the latter is based on the assumption that Germany has to stop relying on Russian gas long-term. To build up an adequate supply of energy, Scholz announced reopening of coal power plants as well as constructing two new LNG terminals on the North-west coast of Germany. These LNG terminals are compatible with green hydrogen, a RES that Germany would begin heavily investing in after the invasion. Scholz also addresses concerns over high energy prices. To remedy increasing prices, the government provided relief packages that included subsidies for low-income households, an increased commuter allowance, and the removal of EEG surcharges.

March-April 2022

By March of 2022, the German government was prepared to implement plans necessary to maintain a sustainable energy supply for the remainder of 2022. As illustrated through the laws and policies passed from March to September 2022, the German government began moving with urgency and expedition. The main reforms made during these months were related to increasing LNG storage and domestic energy production, such as RES and coal.

On March 30th, 2022, the *notfallplan*, or Gas Emergency Plan, was put into action by the *Bundesministerium für Wirtschaft und Klimaschutz/Energie* (Federal Ministry of Economy and Climate Protection/Energy) hereafter BMWK,

[267]Scholz, "Policy Statement by Olaf Scholz, Chancellor of the Federal Republic of Germany and Member of the German Bundestag, 27 February 2022 in Berlin."

at the request of Vice-Chancellor Habeck.[268] [269] The plan was enacted the same day Russia announced its payment for gas deliveries would only be accepted in Roubles.[270] The goal of implementing the Gas Emergency Plan was to get gas storage to ninety percent capacity, to ensure an adequate supply. Originally passed in 2017 to keep Germany in accordance with EU laws, the Gas Emergency Plan contains three phases for gradual levels of LNG scarcity.[271] The first phase, early warning, was enacted. The early warning stage is declared when there is reliable information that a "significant" gas shortage is imminent.[272] While there was no shortage thus far, a halt of supply, extreme conditions, or other security risks threatened the supply. This sparked an emergency meeting of stakeholders, as well as rapid planning to secure gas to store in preparation of a shortage. This served as a warning to the German public and international community that a shortage may be imminent. A month after the early warning was declared, the Gas Storage Act came into force, obligating all gas suppliers to fill their storage tanks as soon as possible. The Gas Storage Act made significant progress, as evident by hitting its storage goal of ninety percent before the September cut off.[273] [274]

In March of 2022, the EU announced a plan called RepowerEU specifically meant to help EU member states recover from their dependence on Russian energy.[275] It worked by providing member states with a fund for supplying energy, and by simplifying the regulatory environment to encourage RES expansion. This plan used language similar to that found in German policies regarding freedom from Russia through renewable energy.[276] While this legislation is significant,

[268]Emergency Plan for the Federal Republic of Germany.
[269]Habeck served as both the Vice-Chancellor and the Minister of Economic Affairs and Climate Protection at the same time under Scholz
[270]Bundesministerium für Wirtschaft und Energie, Germany Has Updated Its Emergency Plan for Gas.
[271]Emergency Plan for the Federal Republic of Germany.
[272]Emergency Plan for the Federal Republic of Germany.
[273]Bundesministerium für Wirtschaft und Energie, *Germany Has Updated Its Emergency Plan for Gas*.
[274]IHK Zu Dortm., "Alarmstufe Gas."
[275]*Gas Market Lessons from the 2022-2023 Energy Crisis*.
[276] Pavlenko and Cherp, "Do Energy Security Crises Accelerate Decarbonisation?"

domestic German policies more directly relate to the research question, RepowerEU will not be analyzed alongside the other legislation.

Many of the renewable energy policies announced in *Zeitenwende* came to fruition through new *Energiewende* packages passed in the months following. The largest legislative shifts were passed on April 6th, 2022, known as the Easter package. This amendments package was the first of two significant reforms to renewable energy, meant to speed up RES deployment. Scholars and politicians alike have called these changes "the largest acceleration package for expansion of renewable energy in decades." [277] The Easter package contains amendments to the largest *Energiewende* policies, such as EEG, WindSeeG, the Energy Industry Act, and NABEG, as well as others.[278] They mainly contain the elimination of red tape through simplifications and reduced paperwork, as well as increased auctions. They hold a few new goals as well, such as officially implementing a 2045 carbon neutrality goal.[279]

June-July 2022

The gas emergency status was elevated to 'alert warning' on June 13th, 2022, after Russian gas imports fell to forty percent of capacity.[280] This level is characterized by a significant disruption of supply, but a disruption that can be handled by the markets and does not yet need to be put under BMWK jurisdiction. With this declaration, gas suppliers are once again kicked into gear to store as much gas as possible. At this point, the goal to reach ninety percent capacity of gas storage would be missed without further action. At this time, the federal government

[277]Maliszewska-Nienartowicz, "Impact of Russia's Invasion of Ukraine on Renewable Energy Development in Germany and Italy."
[278]"Überblickspapier Osterpaket."
[279]Hoberg, "Implementing the EED: Data Centers and the German Energy Efficiency Act."
[280] Industrie handelskammer artikel

announced more relief packages for households to manage rising gas prices, as gas prices are estimated to have increased by over 130 percent from 2019 to November 2022.[281] [282]

Starting in the summer of 2022, individual households felt pressure to conserve as much energy as they could. Alongside the alert level declaration, the BMWK began an information campaign highlighting how households could reduce gas consumption and the importance of the reduction.[283] With the threat of a cold winter ahead with limited energy for heating, the consumers followed suit. In the fall of 2022, gas consumption was twenty one percent lower than in previous years due to the Emergency Plan, information campaigns, and robust gas stockpiles.[284] [285]

Reduced consumption and successfully hitting storage targets kept BMWK from reaching level three, the emergency stage, of the Gas Emergency Plan. [286]At this level, the crisis would be taken out of market control, and all gas supply would be managed and distributed by BMWK at the will of the Chancellor and Vice-Chancellor.[287]

Refiring Coal Plants

In June 2022, the government began reopening coal power plants throughout the country. Before the invasion, *Energiewende* legislation had coal phased out by 2038 at the latest and nuclear phased out by 2023.[288] While this was a difficult task, the country relied on gas, particularly supplied by Russia, to bridge the gap between carbon-based sources and clean energy. However, the energy crisis forced the government to reconsider energy sources, as

[281]IHK Zu Dortm., "Alarmstufe Gas."
[282]Ruhnau et al., "Natural Gas Savings in Germany during the 2022 Energy Crisis."
[283]IHK Zu Dortm., "Alarmstufe Gas."
[284]Ruhnau et al., "Natural Gas Savings in Germany during the 2022 Energy Crisis."
[285]Zhou et al., "Europe's Adaptation to the Energy Crisis."
[286]Zhou et al., "Europe's Adaptation to the Energy Crisis."
[287]Zhou et al., "Europe's Adaptation to the Energy Crisis."
[288]*Deutsche Welle*, "Germany."

diversification would be the only way to secure an adequate energy supply. Therefore, the country was forced to look back to coal and/or nuclear. While carbon neutrality has been the main goal in German energy policy since the early 2000s, the controversy of nuclear, along with Vice-Chancellor Habeck's staunch opposition to the source, Berlin chose to reignite the dirty alternative of coal.[289] By the end of 2022, there were increased coal imports alongside thirteen coal-fired power plants back in operation.[290]

July Package

On July 8th, 2022, the Bundestag passed the second large amendment package to EEG, WindSeeG, the Energy Industry Act, and NABEG, in addition to others.[291] This package, known as the July package, would enact many of the policies outlined in the *Zeitenwende* speech, such as relief packages and involve communities in RES expansion. The July package was the second part of the reforms cited as "the largest acceleration package for expansion of renewable energy in decades." [292]

August-September 2022

Russia had been gradually decreasing the gas supply through Nord Stream, giving justifications for each decline. In late August, Russia entirely cut off the supply of gas in the Nord Stream I pipeline for maintenance issues. A cut off of Nord Stream II was not necessary, as the construction was never completed, and Gazprom announced the project was bankrupt earlier

[289] *Deutsche Welle*, "Germany Revives Dirty Coal amid Russian Gas War."
[290] *Deutsche Welle*, "Germany."
[291] *"Überblickspapier Osterpaket."*
[292] Maliszewska-Nienartowicz, "Impact of Russia's Invasion of Ukraine on Renewable Energy Development in Germany and Italy."

in 2022.[293] Russia claimed equipment malfunctions were to blame for the cut off, but some suggest it may be due to EU sanctions against the country. [294] [295]

Germany was not the only country that faced gas cut offs from Russia. Since Nord Stream supplied many EU countries, nearly the entire EU was experiencing some sort of supply shortage. Overall, the EU saw a fifty percent reduction in Russian gas imports in 2022, reaching the lowest levels of Russian-sourced gas since the mid-1980s.[296] Additionally, other countries, such as Poland (due to ceasing supply through the aforementioned Yamal pipeline) and Bulgaria, lost their entire supply, similarly to Germany. [297] [298]

Nord Stream Sabotage

In late September of 2022, an explosion was recorded in international waters between Denmark and Sweden's economic zones. Soon after the explosion, Nord Stream I and II were found to have significant leaks and became inoperational. It was almost immediately considered to be a sabotage, as many EU member state officials quickly identified it as such. This meant that not only was Russian-EU energy trade not a current reality, but they would never go back to the way they were before the invasion.

It has been a mystery as to who sabotaged the pipelines. At first, many speculated Russia may have had involvement due to their decision to cut off Nord Stream in the month prior.[299] Denmark, Sweden, and Germany launched an investigation into the sabotage, which Denmark and Sweden concluded in 2024 with no arrests.[300] Germany continued their investigation, leading

[293]Belkin et al., *Russia's Nord Stream 2 Natural Gas Pipeline to Germany Halted*.
[294]*Nord Stream 1*.
[295]Liboreiro, "Explosions Recorded before Discovery of Major Baltic Sea Gas Leaks."
[296]Gas Market Lessons from the 2022-2023 Energy Crisis.
[297]Eberly et al., *How Did Germany Fare without Russian Gas?*
[298]Gas Market Lessons from the 2022-2023 Energy Crisis.
[299]*The Nord Stream Incident*.
[300]Gozzi, *Nord Stream*.

to the 2025 arrest of a Ukrainian national.[301] The Ukrainian government has staunchly denied involvement in the attack. German newspapers have reported that the US Central Intelligence Agency may have been aware of the attack in advance and possibly assisted those who carried out the attacks or warned them against it.[302] As of March 2026, no party has been found guilty. [303]

The Status of Gas in Winter 2022

In 2022, Russia's supply to Germany declined from fifty five percent to twenty two percent — with high concentrations of that supply being consumed in the early months of the year.[304] While the entire EU was hit by the Nord Stream and Yamal cut offs, Germany had a higher than average reliance on Russia compared to other EU countries.[305] Germany's large economy meant major industries were impacted by the cut off, in addition to households and communities. While households could reduce their gas consumption through the winter of 2022, industries cannot be as flexible.[306] Therefore, not only was Germany relying on their gas storage for the winter months, they began importing gas from other countries.[307] In fact, Europe's overall gas imports increased by sixty percent in 2022.[308] Specifically, the US and Norway filled the gap for Germany. By the end of 2022, Norwegian gas overtook Russian gas for Germany's top supplier, supplying Germany with over thirty percent of consumed gas in 2022.[309]

[301]Schumacher, "Nord Stream suspect cannot claim immunity"
[302]Lehberger and Schmid, "Nord Stream."
[303]Ciobanu, "Polish Court Blocks Extradition and Frees Ukrainian Suspected in Nord Stream Pipeline Blasts."
[304]*Bundesnetzagentur Publishes Gas Supply Figures for 2022*.
[305]Paillard, "Russia and Europe's Mutual Energy Dependence."
[306]Eberly et al., How Did Germany Fare without Russian Gas?
[307]Eberly et al., *How Did Germany Fare without Russian Gas?*
[308]*Gas Market Lessons from the 2022-2023 Energy Crisis*.
[309]*Bundesnetzagentur Publishes Gas Supply Figures for 2022*.

2023 and Beyond

Germany used the invasion as an opportunity to diversify energy trade partners and sources. For example, the country has opened itself up to trade deals with China, the largest producer of PVs in the world.[310] Additionally, the EU has begun exploring the possibility of trade deals with African countries for RES, particularly green hydrogen.[311] Germany has invested in many projects in Namibia, including the controversial Hyphen project located within a Namibian national park.[312] Green hydrogen trade is a part of the German National Hydrogen Strategy or *Wasserstoffstratgie* announced in 2023. This plan estimates the demand for green hydrogen may be as high as 500 Terawatt hours by 2045, and it is expected that fifty to seventy percent of that will be imported.[313]

German trade has increased particularly high with Norway, a country known for its large fossil fuel resources and commitment to a clean energy transition. In fact, a plan to build a hydrogen pipeline between Norway and Germany was announced in 2024, but was later scrapped.[314] As previously mentioned, Norway became the top supplier of LNG to Germany after the cut off, accounting for thirty percent of all LNG imports in 2022.[315]

In addition to increased trade, there were expansions in renewable energy legislation. The Solar package was passed in April 2024 as an amendment to the EEG.[316] Its main goal is to expand PV systems and decrease bureaucracy in order to achieve the 2030 goal. Notably, the Solar package increased auction volumes, increased subsidies, and decreased required

[310]Beck et al., "The German Energy Transition after the Russia-Ukraine War-- Challenges and Opportunities."
[311]Komorowski and Grzywacz, "Green Hydrogen in Africa."
[312]Rust, "How Germany Is Fueling Namibia's Green Hydrogen Revolution."
[313]Bundesministerium für Wirtschaft und Klimaschutz, "Die Nationale Wasserstoffstrategie."
[314]*Reuters*, "Norway's Equinor Scraps Plans to Export Blue Hydrogen to Germany."
[315]*Gas Market Lessons from the 2022-2023 Energy Crisis*.
[316]"Das Solarpaket I Im Überblick."

permitting. The Solar package has some inclusions of non-PV renewables as well, but those sections are for the purpose of integrating EU laws.[317]

Amendments to EEG

Easter Package

The amendments known as the Easter package and July package would be implemented in EEG 2023. Messages of acceleration and securitization are found throughout the entirety of the Easter Package. This is through the discursive shift in the language within the legislation, the acceleration of current policies, and the addition of new targets. Each notable aspect of the Easter Package will be summarized below. Analysis of the theoretical application and significance of the Easter Package can be found in the legislative shift section later on in this chapter.

Similar to all other Bundestag legislation, the Easter Package begins by establishing the motivations of the amendments. The motivations for the Easter Package are clearly outlined as follows:[318]

> "There is a two-fold urgency for this. Firstly, the climate crisis is coming to a head. Secondly, Russia's invasion of Ukraine in violation of international law shows how important it is to shift away from fossil fuels and to press ahead with the expansion of renewable energy. Now, if not before, renewable energy has become a matter of national security." [319]

Following this statement, it goes on to say "the Easter Package is the largest revision of energy policy in decades," [320] and suggests this package is intended to "over[ride] public interest and serve public security." [321]

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[317]"Das Solarpaket I Im Überblick."
[318]Legislation via a summary paper published by the BMWK
[319]"Überblickspapier Osterpaket."
[320]"Überblickspapier Osterpaket."
[321]Bundesministerium für Wirtschaft und Klimaschutz, "What's inside the Easter Package."

Raising Targets

While the eighty percent goal by 2030 was made after Scholz entered office, the Easter Package ratified the goal into *Energiewende* legislation. When establishing a framework for the eighty percent goal, the legislation states they will limit fossil fuel imports "thus reduc[ing] our gas imports in particular." [322] To successfully reduce fossil fuel imports, the Easter Package expands auctions in solar and wind and will convert biomethane plants to peaker power plants specifically for industries hard to decarbonize. These changes make it possible for electricity to be sourced nearly completely from RES by 2035.[323]

Cutting Red Tape

As previously mentioned, one of the biggest criticisms of *Energiewende* before the invasion was the increased red tape in the auction system. The multi-part permitting and impact reports significantly slowed the process of wind and solar production.[324] Therefore, cutting red tape is a quick and simple way to accelerate RES deployment. The Easter Package mainly simplifies the process for smaller producers such as households, communities, and small businesses. For example, citizen initiatives are exempt from the auction process completely, and their procedures are outlined in EU laws (which requires less documentation than German auctions); RES self-producers will have significantly less paperwork as well. Additionally, local municipalities can create their own land/nature conservation provisions instead of handling a comprehensive environmental impact statement.[325]

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[322]"Überblickspapier Osterpaket.", 3.
[323]"Überblickspapier Osterpaket."
[324]*Is Bureaucracy Stalling the Energy Transition?*
[325]"Überblickspapier Osterpaket."

Consumer Price zrelief

The Easter Package also works to make renewable energy cheaper. With already high energy costs being exacerbated by the Russo-Ukrainian War, the cost of renewable energy desperately needed to be lowered. To achieve this, the EEG surcharge was heavily reduced as promised within the *Zeitenwende* speech.[326] The surcharge would only need to be paid when using the public grid, and self-producers would no longer be required to pay a surcharge at all, including heat pumps. In addition, municipalities get a higher financial stake in offshore wind projects. Financial benefits coupled with increased freedom for decision-making throughout the process, municipal offshore wind projects are far more incentivized in the Easter Package.[327]

July Package

The July Package is the second part of the acceleration packages passed in the spring and summer of 2022.[328] The framework of the July package is identical to that of the Easter Package, and some notable changes have been made within this package. First, cutting red tape around PV and wind installations. The PV auction system will be standardized and digitized for simplicity and ease. For wind energy, past renditions of EEG have limited the size of innovative/new technological or "pilot" wind turbines.[329] [330] The July Package eliminates the size limits for pilot wind turbines. Second, the July Package strengthens community-run projects. Although community initiatives no longer have to participate in the auction system, they will still be

[326]Scholz, "Policy Statement by Olaf Scholz, Chancellor of the Federal Republic of Germany and Member of the German Bundestag, 27 February 2022 in Berlin."
[327]"Überblickspapier Osterpaket."
[328]Bundesministerium für Wirtschaft und Klimaschutz, "Überblickspapier Osterpaket."
[329]Bundesministerium für Wirtschaft und Klimaschutz, "Überblickspapier Osterpaket."
[330]Gesetz Zur Änderung Des Energiewirtschaftsrechts Im Zusammenhang Mit Dem Klimaschutz-Sofortprogramm Und Zu Anpassungen Im Recht Der Endkundenbelieferung, §22a.

provided with the same financial incentives as those required to use the auction system. Finally, the July Package is the first piece of *Energiewende* that begins exploring green hydrogen. This package mainly provides funding for exploratory implementation and storage solutions. Since biomethane's phase-out was established in the Easter Package, the July Package shifts biomethane plants to green hydrogen.[331]

Solar Package

The main goal of the Solar package is to expand PV systems to achieve the 2030 goal added to EEG 2023. It achieves this through expanding individual auction volumes to 2.3 GW per year, opening disadvantaged agricultural areas to ground installations, and increasing the number of auctions per year.[332] The Solar package contains a similar structure to the aforementioned packages, as it contains expansions and cuts permitting steps that have been deemed unnecessary. This includes exempting smaller plants from "supplier obligations" and solar plant certifications.[333] However, the Solar package does include restrictions on PV systems. The majority of PV systems must be added to pre-existing buildings, and one cannot build a structure for the sole purpose of installing a PV system.[334]

[331]Gesetz Zur Änderung Des Energiewirtschaftsrechts Im Zusammenhang Mit Dem Klimaschutz-Sofortprogramm Und Zu Anpassungen Im Recht Der Endkundenbelieferung.
[332]"Das Solarpaket I Im Überblick."
[333]"Das Solarpaket I Im Überblick."
[334]"Das Solarpaket I Im Überblick."

Amendments to Other *Energiewende* Legislation

EEG was not the only piece of *Energiewende* legislation that was modified through the Easter and July Packages. Other legislation, such as WindSeeG, the Energy Industry Act, hereafter EnWG, the Federal Requirements Plan Act, the Grid Expansion Acceleration Act; and other laws and statutes. Since they are contained within the same packages, the preamble and discursive context is identical to those previously mentioned.

Target Expansion

These laws see significant expansion through various methods. In WindSeeG, offshore wind auctions increase to thirty gigawatts by 2030, forty by 2035, and seventy by 2045.[335] The Federal Requirements Plan Act sees the introduction of nineteen new grid expansion projects and amends seventeen projects to expand them further.[336]

Not only are there expansions, but there are also growing targets. The goal of carbon neutrality by 2045 was ratified into EnWG and the Federal Requirements Plan Act. This accelerates renewable energy and grid expansion in many ways. First, it forces future amendments to be "rigorously oriented" towards the carbon neutrality goal, basically turning these laws into renewable energy expansion methods.[337]

In an amendment to the Energy Efficiency Act passed in 2023, the government requires large data centers (300 kW or more) to be carbon neutral by 2030. It also required all data centers to reuse ten percent of their energy by 2027, and twenty percent by 2028.[338]

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[335]"Das Solarpaket I Im Überblick.", 7.
[336]Bundesministerium für Wirtschaft und Klimaschutz, "Überblickspapier Osterpaket.", 8.
[337]"Das Solarpaket I Im Überblick.", 8.
[338]Zepf and Schaefer, "Sustainable Data Centers—The German Energy Efficiency Act."

Cutting Red Tape

Implementing the 2045 goal into EnWG and the Federal Requirements Plan Act not only expanded carbon-neutrality, it streamlined RES deployment.[339] This change means some RES projects may be exempt from Federal Sectoral Planning involvement, accelerating and simplifying the process.

Additionally, WindSeeG changes mean preliminary investigations will no longer be required. Furthermore, all remaining investigations will be pooled together, Environmental Impact Assessments (EIAs) and consultations will be merged, planning and approvals will be streamlined, all leading to contracts being awarded as soon as possible. All together, these changes reduce the time between auction awards and contract approval, meaning offshore wind site developments can occur significantly faster than before.[340]

Conclusion

Overall, all changes made to *Energiewende* legislation accelerate RES implementation primarily through making alterations to the current auction system. First, the Easter/July packages expand the auction system for nearly all RES. Land is given to RES through increased auction sites, green hydrogen is identified as an unexplored RES, and new grid expansion projects are introduced to expand electrification. As mentioned in the EEG section of the Easter package, these changes make it possible for nearly all electricity to be sourced from renewables by 2035. Additionally, many goals established by the Scholz coalition are internalized to *Energiewende* legislation. This includes the eighty percent by 2030 goal added to EEG, and the carbon neutrality goal by 2045 added into EnWG and the Federal Requirements Plan Act.

[339]Bundesministerium für Wirtschaft und Klimaschutz, "Überblickspapier Osterpaket.", 9.
[340]Bundesministerium für Wirtschaft und Klimaschutz, "Überblickspapier Osterpaket."

Adding numerical goals directly into legislation provides a framework and mission for future amendments that allows for more ambitious changes.

Additionally, the Easter and July packages slash the red tape that had been dragging down progress for years. Significant changes were made in the process of winning an auction site and obtaining proper documentation to commence RES production. This includes eliminating assessments and investigations, pooling consultations, and less federal involvement in planning processes. To counter the decreased regulation for EIAs, municipalities are given the power to create provisions to protect local natural areas of importance. Furthermore, decreased bureaucracy was targeted to benefit smaller producers, such as community initiatives and municipal governments, to encourage participation from diverse stakeholders and to strengthen the decentralization of renewable energy.

The Easter and July packages also addressed the concerningly high prices of energy for consumers. Because prices were likely to increase due to the gas shortage, the EEG surcharge was eliminated and RES projects were made more financially attractive to incentivize investments.

These changes ushered in a new era of *Energiewende,* where development can happen faster than ever before. Unlike previous *Energiewende* laws, these amendments are rolled out alongside a newfound geopolitical crisis, threatening energy security. Therefore, these are the first set of *Energiewende* laws with a dual motive of climate change mitigation and energy security.

Legislative shift: Securitization and Acceleration

The legislative shift that took place following Russia's invasion of Ukraine was the largest leap taken within *Energiewende,* and would not have taken place without Russia’s

invasion of Ukraine.[341] Beginning with the announcement that the country will strive for one hundred percent renewable power by 2035, followed by "the largest acceleration of renewable energy," it is clear Berlin was making these decisions with a newfound sense of urgency.[342] The urgency expressed through the legislative shift did not come from concerns over climate change; instead, it came from concerns over Russian dependence and a need for energy security. This suggests that energy security was the driver for this acceleration, not climate change mitigation. How can this important shift be seen in legislation and policies made after Russia's invasion? When analyzing these changes within their geopolitical context, it becomes clear that there is a staunch turn from renewables as a climate change mitigation technique to a defense mechanism for energy security. Furthermore, this case suggests using RES as a security measure accelerates their deployment. This concept will be explored by: 1. Identifying the use of renewables as a replacement for Russian gas; 2. Considering the inclusion of energy security themes in this batch of legislation and; 3. Investigating how the aforementioned themes lead to a more rapid transition to renewables.

Russian gas imports had increased in Germany since the beginning of *Energiewende* up until the invasion.[343] That is because Germany was relying on gas as a bridging fuel between dirtier fossil fuels, such as coal, and clean renewable energy. When Russia invaded Ukraine and Germany started moving away from Russian gas as much as possible, this original intent was flipped on its head. Instead, Berlin was forced to view coal and RES as a replacement for Russian gas. While they had always kept completely renewable sourced power as a long-term goal, the nature of RES meant it was unable to meet the immediate needs during the time of the

[341]Maliszewska-Nienartowicz, "Impact of Russia's Invasion of Ukraine on Renewable Energy Development in Germany and Italy."
[342]Maliszewska-Nienartowicz, "Impact of Russia's Invasion of Ukraine on Renewable Energy Development in Germany and Italy."
[343]*Energy Consumption in Germany in 2021*.

shortage.[344] Therefore, the government reopened "climate-damaging coal" fired power plants, as Chancellor Scholz has called it, to replenish energy storage in anticipation of the energy crisis.[345] When they made this decision, they went back on their climate mitigation goals and undid years of work towards a carbon-neutral economy. Considering this decision was made by a climate-friendly coalition that had months earlier announced a goal to be completely powered by renewables by 2035, this shows how significant the threat of an energy shortage was to Germany.[346] This decision is one of the first times it is clear that energy security was put before climate mitigation in modern German energy policy. Additionally, the cut off exposed the extent to which Germany was reliant on Russian gas, and forced them to find a long-term replacement. To achieve this, Germany imported LNG from other countries — such as the US, Norway, and Saudi Arabia — and accelerated their RES deployment. Because Germany wanted to phase-out gas by 2045, they were forced to accelerate two decades' of sunsetting in under a year. They needed to treat every other source of energy as a direct replacement of Russian gas — even though LNG was supposed to be the replacement itself.

Not only did Berlin's reaction expose the extent of its dependency, it also instilled energy security themes into *Energiewende* policy for the first time. As previously mentioned, the rate at which Germany was forced to substitute Russian gas altered the intent of RES. Alongside this shift was the introduction of RES as a source of security. The official verbiage used by the German Federal Government introduces the Easter and July legislative packages with, "renewable energy has become a matter of national security." [347] This shows that the expansion of renewables through the aforementioned legislation cannot be separated from the theme of

[344]Bajema, *Case Study: How Europe Made It Through the 2022-23 Winter*.
[345]"Rede von Bundeskanzler Scholz Beim Weltwirtschaftsforum Am 18. Januar 2023."
[346]*German Energy To Be 100% Renewable By 2035*.
[347]Bundesministerium für Wirtschaft und Klimaschutz, "Überblickspapier Osterpaket."

national security and energy security. This means the acceleration of RES deployment brought by these packages is at least partially because of the inclusion of security as a motivation.[348] Additionally, the way the country needed to use RES could no longer be explained simply with concerns over climate change. Instead, relying on RES for energy independence — which is the route the government was taking — requires energy security as a rhetoric. Therefore, *Energiewende* was turned into a transition towards energy independence and away from fossil fuels, all powered by renewables.

In addition to climate change being a factor, the shift in legislation towards both treating RES as a direct replacement for Russian gas and including energy security as a motivating factor, creates a faster transition to renewable energy. It is widely accepted that the post-invasion legislation has accelerated renewable energy deployment.[349] [350] [351] The acceleration witnessed is not occurring alongside the two aforementioned shifts; it is happening due to those shifts. Within securitization theory, the purpose of elite actors breaking from standard norms is so they can make quick decisions to protect the referent object from the threat.[352] In this case, the break from standard norms is the two aforementioned acts, and the quick decisions made after are the acceleration of renewable energy expansion.

Discursive Shift: Signs of Securitization

The discourse around *Energiewende* changed dramatically after Russia's invasion of Ukraine. For example, Ukraine and Russia quickly became the most popular topics in social

[348] For more on this, see the later section on acceleration.
[349]Kumar, "From Dependency to Resilience."
[350]Maliszewska-Nienartowicz, "Impact of Russia's Invasion of Ukraine on Renewable Energy Development in Germany and Italy."
[351]Hazra, "The Impact of the Russian-Ukrainian War on Germany's Climate Policy: Balancing Energy Security and Sustainability."
[352]Buzan et al., *Security*.

media posts regarding *Energiewende* in the days following the invasion. Additionally, #freiheitenergie (freedom energy) was used in tweets for the first time in reference to *Energiewende* during the same time period.[353] This connection was also made by German politicians, as they would spend significantly more time referring to security in conjunction with *Energiwende* than ever before. When analyzing the statements made by politicians, such as Chancellor Scholz and Vice-Chancellor Habeck, it becomes clear that security quickly became a main motivation for *Energiewende*, even more so than climate change.

Chancellor Scholz

The *Zeitenwende* speech delivered by Scholz three days following the invasion has become infamous for setting a new era of security policy for Germany. It is not a coincidence that discussions of energy make an appearance in a speech regarding German national security post-invasion. When speaking about energy, Scholz ushered in the era of security as a top priority in *Energiewende* by starting the remarks with this statement: "The events of recent days and weeks have shown us that a responsible, forward looking energy policy is not just crucial for our economy and our climate. It is also crucial for our security. This means that the faster we make progress with the development of renewable energies, the better." [354] Scholz continues to announce many of the changes that would be made in the Easter and July packages, including elimination of the EEG surcharge, relief packages, and other commitments.[355]

Since *Zeitenwende*, Scholz has made numerous other statements that link renewable energy with security. In a speech made to the World Economic Forum in January 2023, Scholz acknowledged the discursive shift that took place following the invasion.[356] He begins by stating

[353]Wiertz et al., "A Turn to Geopolitics."
[354]Scholz, "Policy Statement by Olaf Scholz, Chancellor of the Federal Republic of Germany and Member of the German Bundestag, 27 February 2022 in Berlin."
[355]Scholz, "Policy Statement by Olaf Scholz, Chancellor of the Federal Republic of Germany and Member of the German Bundestag, 27 February 2022 in Berlin."
[356]"Rede von Bundeskanzler Scholz Beim Weltwirtschaftsforum Am 18. Januar 2023."

"what a difference a year makes," explaining that 2022 held potential to be a year of progress towards carbon-neutrality. Throughout this speech, he reaffirms the use of renewables as a source of security. The newfound nuanced perspective of the various benefits of renewables takes a front seat in this speech. As Scholz explains, "Whether you are a business leader or a climate activist, as a security policy specialist or an investor, it is now crystal clear to each and every one of us that the future belongs solely to renewables for cost reasons, for environmental reasons, for security reasons, and because in the long run, renewables promise the best returns." [357] Additionally, he alludes to an acceleration taking place directly because of Russia. He identifies the "completely new dynamic" that renewable energy has taken on in the last year.[358] Naturally, the dynamic he is referring to is the inclusion of security as a motivating factor for renewable energy expansion. He goes on to say that the new dynamic is "not despite, but because of Russia's war." [359]

This speech is important for two main reasons. First, it shows the nuanced way in which renewable energy is discussed following the invasion. Not only is renewable energy an economic investment and climate change mitigation technique, it is also an important tool for security. Second, this speech is almost a year after Russia's invasion of Ukraine. At the time of the speech, Germany was confident they would make it through the winter with an adequate amount of fuel, and measures taken in 2022 would be sufficient to lift them from the energy crisis. Therefore, the discussions of renewable energy as a source of security was not temporary rhetoric used to mitigate the energy crisis. Instead, it is a more permanent fixture of *Energiewende* and discussions of renewable energy.

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[357] "Rede von Bundeskanzler Scholz Beim Weltwirtschaftsforum Am 18. Januar 2023."
[358] "Rede von Bundeskanzler Scholz Beim Weltwirtschaftsforum Am 18. Januar 2023."
[359] "Rede von Bundeskanzler Scholz Beim Weltwirtschaftsforum Am 18. Januar 2023."

Vice-Chancellor Habeck

Considering Habeck was the Minister of Economic Affairs and Climate Protection, Habeck's messaging regarding *Energiewende* is crucial. Similar to Scholz, Habeck includes themes of security and directly mentions Russia when speaking about renewable energy. As a loyal member of the Green Party, Habeck shares the same tendency to combine environmental and climate change issues with other topics. He is doing exactly that when speaking about the impact of Russia's invasion on *Energiewende*. His speeches following the invasion often include topics of freedom, autonomy, protection, and independence within the context of climate protection. In a statement about the connection between climate protection and the Russo-Ukrainian War, Habeck told reporters, "What is climate protection all about? It's not about climate, it's about protection of freedom." [360] He went on to say, "From climate action to the war in Ukraine… they want unlimited power… that is why security is at the heart of this debate." [361] These statements tie climate protection to security through the Russo-Ukrainian War. After the war's commencement, the mention of Russia has always been present when connecting security to renewable energy. Therefore, the war is central to any discussion linking German security and energy.

Habeck has also tied the two concepts together more directly, in a manner closer resembling Scholz. For instance, when speaking to reporters about the Easter and July packages, Habeck said, "On the one hand, the climate crisis is coming to a head. On the other hand, Russia's invasion shows how important it is to phase out fossil fuels and promote the expansion of renewables." [362] This comment displays nearly every piece of the argument for security rhetoric including: mentioning Russia's invasion of Ukraine in the same breath as climate

[360]"Robert Habeck's Powerful Call: Defending Freedom Through Climate Action."
[361]"Robert Habeck's Powerful Call: Defending Freedom Through Climate Action."
[362]*Reuters*, "Germany Unveils Plans to Accelerate Green Energy Expansion | Reuters."

change, calling for an acceleration of renewables, and implying Russia's invasion was a wake-up call regarding dependency.

Comments made by politicians following Russia's invasion of Ukraine is further evidence that security has become central to discussions about renewable energy, and has motivated further action on renewable energy legislation. These statements follow the same pattern. First, they mention climate change. Second, they mention Russia and/or their invasion of Ukraine. Third, they call for the expansion of renewables, specifically because of the aforementioned crises. This predictable pattern of discourse is unique to post-invasion discussions of energy. Compared to previous discussions around the motivations and considerations of *Energiewende* mentioned in previous chapters, this is a far more nuanced perspective on renewable energy. Before the invasion, the main goal of renewable energy development was to make "climate protection economically lucrative," and EEG was in the "interest of managing global warming and protecting the environment." [363] [364] As seen through political discourse regarding *Energiewende* post-invasion, the war solidified renewable energy into a *freiheitenergie*.

Evidence for Securitization

The reaction to Russia's invasion of Ukraine brought a new era to *Energiewende*. The rapid acceleration and swaths of ambitious legislation are evidence of *Energiewende* undergoing the process of securitization as soon as Russia invaded Ukraine. As illustrated through this chapter, the behavior exhibited by Berlin is stark when contrasted with previous responses to geopolitical events. This difference can only be described as an action taken to protect a referent

[363]Fell, "A Global Vision on Renewable Energy with Hans-Josef Fell."
[364]Erneuerbareenergiengesetz (2000).

object from an existential threat. To align the German response following Russia's invasion of Ukraine with securitization theory, the following will detail how each action taken was evidence of securitization starting from the *Zeitenwende* speech. First, each step of securitization will be thoughtfully identified. Second, further evidence of securitization will be found through the broad theoretical framework.

Identifying Securitization

As established in the conceptual framework chapter, the referent object in this case is the domestic energy market, including both producers and consumers. Using Russian energy as a steady supplier, while creating a lucrative renewable energy market, kept energy relatively affordable and reliable.[365] The cut off experienced in 2022 threatened the affordability and quantity of available energy because Germany was so dependent on the source. Unlike the Fukushima case, where a government response was optional, the government was required to take major steps to secure its supply, or else there would be significant repercussions for the well-being of the German public and economy. Therefore, the cut off of Russian gas was an existential threat. An existential threat to an energy market is often a sudden scarcity of supply, meaning this case aligns with the theory's expectations.[366] Not only was the cut off a genuine threat to Germany's energy supply as evidenced by the winter 2022 energy crisis, but political elites also deemed it as such. This is evident through the discursive shift that took place following the invasion, when security entered *Energiewende* discourse for the first time.

The first time security was mentioned in conjunction with *Energiewende* was the *Zeitenwende* speech given three days following the invasion when Scholz stated renewable

[365]Götz, "Russian Gas and European Energy Security."
[366]Ramadhan, "The Securitization of Energy Issues from The Perspective of Security Studies."

energy is "crucial for our security." [367] The birth of this new security rhetoric, in addition to providing a roadmap of future *Energiewende* policy, makes *Zeitenwende* the speech act of this case. This speech carried significance for setting the tone for Germany's reaction to the invasion, and has been cited as the birth of a new era for Germany.[368] The *Zeitenwende* speech is Chancellor Scholz asking the German public for permission to make renewable energy an issue of national security, making it a speech act.

Following the speech, Berlin was forced to break from standard norms and procedures. There are many ways a 'break from standard norms' could be applied to this case. First, there is direct evidence of emergency action being taken to secure the energy supply. For example, the deployment of the Gas Emergency Act enforced strict rules to ensure an adequate supply of gas in the following months. Additionally, reopening coal-fired power plants to secure the supply was a reversal of the leadership's most highly held beliefs, implying extraordinary measures needed to be taken. Finally, the official language of the BMWK was to "over[ride] public interest and serve public security," highlighting the sense of urgency to secure energy supply. [369]

There was a broken norm within the broad category of pace and dependability. Before 2022, *Energiewende* was treated as climate change mitigation through measured, steady actions.[370] The government could reliably produce an amendment every few years with minor changes that increasingly made renewable energy implementation more difficult for the supplier, and more expensive for the consumer. Following the invasion, the Bundestag, along with BMWK, stripped regulations by streamlining permitting, eliminating fees, and providing relief packages, making renewable energy simpler to implement and more affordable for consumers.

[367]Scholz, "Policy Statement by Olaf Scholz, Chancellor of the Federal Republic of Germany and Member of the German Bundestag, 27 February 2022 in Berlin."
[368]Götz, "Russian Gas and European Energy Security."
[369]Bundesministerium für Wirtschaft und Klimaschutz, "Überblickspapier Osterpaket."
[370]The one exception to this would be after the Fukushima disaster when a rapid shift was made.

This was done alongside the expansion of renewable energy in a way unseen for decades. This, within itself, is a break of standard norms. Additionally, one of the purposes of a break from standards norms in the first place is to be able to implement changes quickly to respond to the threat effectively. From this perspective, the rapid pace of their response is additional evidence of securitization.

Finally, as mentioned within the conceptual framework chapter, a change in supply is necessary to be considered a break from standard norms and procedures within the context of securitization in energy studies. The German government spent the entire year of 2022 scrambling for an alternative energy supply. As previously mentioned, they ended up accumulating a supply through importing LNG from other sources, such as Norway and the US, and heavily investing in renewable energy. Within the application of securitization in energy studies, the change of a country's energy supply is often a decision made by a country for itself. In this case, Russia's actions forced Germany to change their supply, meaning Germany had no say in the necessity to switch sources. Despite this, the change of supply in Germany still aligns this case with theoretical expectations.

For securitization to occur, it is very important that the public continuously accepts it as such. The German public directly supported the government's reaction to Russia's invasion, including the changes made to *Energiewende*. In polls conducted in the weeks following the invasion, the majority of the German public found the government's response to be appropriate.[371] Additionally, sixty six percent of those asked were concerned about restrictions to energy supplies because of the war.[372] Therefore, the government's measures to support a steady energy supply felt warranted by the public. Furthermore, German households were effective at

[371]Kinkartz, "Germans Approve of Government U-Turn on Ukraine."
[372]Kinkartz, "Germans Approve of Government U-Turn on Ukraine."

restricting their gas usage to save gas for the winter, as was requested by the government through the Gas Emergency Plan. Gas consumption by households decreased by twenty one percent in 2022 after the government began a media campaign to save gas.[373] The public's willingness to reduce gas consumption implies acceptance of the government's reaction, therefore allowing securitization to continue. The public supports the government's actions immediately following the invasion, in addition to generally supporting the implementation of renewable energy. About eighty percent of Germans support renewable energy expansion.[374] Overall, the public supports the government's response, and endorses the results of securitization in accelerating *Energiewende*.

Additionally, the aforementioned discursive shift was commonplace throughout Germany and was not limited to politicians. The German public began to see renewable energy as their ticket to energy independence and freedom from Russia. Renewable energy's new label as the "energy of freedom" implies that not supporting renewable energy deployment would jeopardize freedom and security.[375] From this perspective, the public treating renewable energy as a symbol for freedom acts as an endorsement, especially during a time of war.

Other Considerations for Securitization

While the German government's main motivation for securitizing *Energiewende* was protecting energy supply against the threat, it is possible there was a secondary motivation to keep the weakness of Russian dependency from being exposed. When securitization occurs, it is common for the state to take emergency action to appear strong in the face of the threat.[376] In this

[373]Zhou et al., "Europe's Adaptation to the Energy Crisis."
[374]*Do German Citizens Support the Energiewende?*
[375]"Germany to Spend 200 Billion Euros on Energy Transition in Independence Push | Clean Energy Wire."
[376]Buzan, Wæver, and De Wilde, *Security: A New Framework for Analysis*, 23.

case, over the years, many had warned government leadership that dependence on Russia was risky and should be avoided because Russia could leverage energy supply to force concessions against German interests. When these claims were actualized because of Russia's invasion of Ukraine, it is possible the government felt the need to prove they could secure an energy supply independent of Russia. There is evidence of this mindset through the rhetoric of government leadership, such as Chancellor Scholz. This includes mentions of strength when fighting against Russia. [377]

As deduced within the conceptual framework chapter, the broad concept of energy security fits well within securitization theory, and renewable energy is often an effective way to achieve energy security. For post-invasion Germany, investing in RES is the only long-term way to achieve energy security. This makes the government's response to further invest in those sources for security purposes logical. Yergin defines energy security as "reliable, adequate supplies of energy at reasonable prices and in ways that do not jeopardize major national objectives and values." [378] In order to achieve a reliable and adequate supply of energy following the invasion, the country relied on alternative imports, storage, and coal. Long-term, the government has prioritized carbon neutrality, meaning fossil fuels would jeopardize a major national objective. That leaves imported and domestically produced renewable energy as the only way the country could achieve a reliable and adequate supply in a way that would not jeopardize its values. Therefore, Germany's responses align with the theoretical framework of energy security and align with securitization.

[377]"Rede von Bundeskanzler Scholz Beim Weltwirtschaftsforum Am 18. Januar 2023."
[378]Yergin, "Ensuring Energy Security."

Proposed Counterfactual Outcome

If German renewable energy had not experienced securitization, the German government would not have acted with a sense of urgency when dealing with RES implementation, and an acceleration would not have occurred. This would begin with Scholz finding the risk of a cut off to be a non-existential threat, or no threat at all. In order for the German government to see little to no threat in the imminent cut off, they would have had to be sure they could secure a supply elsewhere within the current framework or keep Russia as a supplier. The former may include importing for elsewhere, while the latter would require Germany to take a more neutral stance in the war. If this were to be the case, the mentions of energy in the *Zeitenwende* speech and all subsequent speeches would be more similar to those used in Merkel's speech following the Fukushima disaster. Regarding transition, instead of terms urgently suggesting what is "crucial for…security" and "the faster… the better," phrases indicating what is "sensible" and "reasonable" would be used.

Additionally, *Energiewende* would not have been lifted from the standard norms it once held, such as measured progress. Since securitization spurred emergency action, emergency action could not have taken place, meaning *Energiewende* would have continued on with its standard rollout speed and the sole motivation of climate change mitigation. Furthermore, a lack of securitization would mean that security would not have been linked to renewable energy, and would not have acted as a motivation for policies. To illustrate this point further, a lack of an existential threat would mean there would be no reason for security to be a motivating factor for *Energiewende.* Without this additional motivation, *Energiewende's* progress would not change from before — meaning there would be no sense of urgency and no acceleration.

A second counterfactual would be if Scholz thought Germany could respond to the threat of a cut off without breaking the standards and norms of energy policy. In this proposal, Germany would have experienced slightly more measures to secure energy, but not as many as were seen. This may have meant the deployment of the Gas Emergency Plan, but no coal fired power plants reopening, and a less ambitious *Energiewende* amendment. Considering emergency action was needed to secure a healthy energy supply for the winter, this response would not have been sufficient. If securitization had not occurred, the energy crisis could have been far worse.

Conclusion

As Germany was facing an impending energy crisis, the government was forced to respond with measures to reduce the harm done by Russia. The discourse around *Energiewende* shifted away from simply a climate change policy to a national security measure. This began in Scholz's *Zeitenwende* speech when the word 'security' was used to describe *Energiewende* for the first time. This rhetoric would remain persistent for Scholz and other German politicians, and would eventually follow a formula that combines climate with independence. The security and independence rhetoric was not only adopted by politicians, it found its way into the mainstream. Following the invasion, using the term 'freedom energy' to describe renewables entered the public lexicon for the first time. Legislatively, the government took action to recover from the loss as quickly as possible. This is demonstrated through non-*Energiewende* policy, such as the Gas Emergency Plan and refiring coal power plants, as well as *Energiewende* policy, like the Easter, July, and Solar packages, green hydrogen investments, and RepowerEU. These policies accelerated the rate of renewable energy implementation. These actions, in addition to their newfound security motivation, can be matched with the process of securitization. The speech act came through Scholz's *Zeitenwende* speech, and the emergency action came through the

aforementioned legislative changes. That emergency action, and lifting of standard norms, allowed for the acceleration observed.

Section V: Discussion

Findings

Given the vitality of renewable energy deployment in the 21st century, this thesis asks the question: to what extent did Russia's invasion of Ukraine impact Germany's renewable energy implementation goals? The findings affirm the hypothesis that *Energiewende* was accelerated after Russia invaded Ukraine. The findings brought by each method are described below.

Content analysis confirmed climate change mitigation was the major motivation for *Energiewende* before Russia's invasion of Ukraine. Following the invasion, the security motivation emerged and remained for the following two years. However, the emphasis on security was less prominent in 2024. Process-tracing was applied to link Russia's invasion to *Energiewende's* acceleration through the security motivation. Every necessary condition of securitization was identified in this case, completing the process-tracing analysis. Additionally, the proposed counterfactual of no securitization caused no emergency action and no acceleration. Instead, *Energiewende* would have continued at the same rate as before, and security would have never entered the Zeitgeist. The findings of both methods support the hypothesis and successfully link Russia's invasion of Ukraine to *Energiewende* acceleration.

Summarized Argument

The following will summarize the main arguments of each chapter, paying particular attention to the stark contrast of the German government's actions before and following Russia's invasion regarding the handling of renewable energy.

The creation of EEG in 2000 started a long and comprehensive renewable energy transition that would be motivated by climate change mitigation until the Russian LNG cut off caused by Russia's invasion of Ukraine. When the Green Party came to federal leadership for the first time, they used the platform to advance their progressive environmental views, including climate change policy and sustainable development. To bring climate change policy into energy, Green Party leaders wrote EEG, to which the preamble cites a need to manage global warming and protect the environment.[379]

Since its ratification, EEG along with other *Energiewende* legislation, would see measured advances for the next decades. This includes the adoption of Merkel's Energy Concept, WindSeeG, the auction system, and other plans to expand renewable energy deployment. Additionally, they added stricter goals such as the 20-20-20 by 2020 plan and the 2045 goals. Following the 2017 revisions of EEG, many in the industry began complaining of permitting and red tape associated with the auction system. It is believed that these changes slowed the rate of implementation for *Energiewenede*.

Energiewende policy throughout the 2000s and 2010s was generally steady and reliable. However, after the Fukushima disaster, Merkel announced the nuclear moratorium that would immediately decommission many nuclear power plants and would phase out all nuclear power by 2021.[380] While this was an abnormal turn of events, the Fukushima disaster did not lead to the

[379]Erneuerbareenergiengesetz (2000).
[380]Der Spiegel, "Out of Control."

securitization of *Energiewende*. Fukushima was never viewed as an existential threat to government leadership, such as Merkel, and the nuclear moratorium does not qualify as emergency action. Therefore, *Energiewende* was still a political issue before Russia's invasion of Ukraine, at which point it graduated from politics to become securitized.

Throughout the transition, Germany relied on Russian energy to maintain a steady and affordable supply. The supply was maintained mainly through Nord Stream I; the pipeline would later be sabotaged to signify the end of Russia and Germany's LNG trade.[381] LNG was vital to *Energiewende*, as LNG was treated as a bridging fuel between dirtier fossil fuels, such as coal, and renewable energy. The cut off of LNG following Russia's invasion began almost immediately after the invasion and came to an end in September. By June, Nord Stream I was operating at forty percent capacity, and Gazprom announced Nord Stream II would never be deployed.[382]

When Russia invaded Ukraine, *Energiewende* underwent a securitization for the purpose of accelerating the energy transition. This began with the speech act, *Zeitenwende,* where the discourse of renewable energy blended with security discourse for the first time in mainstream German politics. The security discourse was directly related to Russia's invasion of Ukraine, as evident through a template used by political leadership: first, mention climate change; second, mention Russia and/or the Russo-Ukrainian War; third, point out that these illustrate the vitality of renewables, therefore they will be expanded. Not only were politicians using security rhetoric to justify an acceleration of renewable energy, but the public also adopted renewable energy as a security measure.

[381]Högselius, "The Rise and Fall of the Nord Stream Pipeline."
[382]Högselius, "The Rise and Fall of the Nord Stream Pipeline."

This discursive shift broke *Energiewende* from historic norms and paved the way for emergency action to take place. Emergency action can be broken into two subcategories: *Energiewende* amendments and broad policies. *Energiewende* amendments such as the Easter, July, and Solar packages are significant steps forward, respectively. Moreover, three strong amendments passed within a two-year period are unheard of in *Energiewende*, highlighting the abnormality of this case. Broad policy changes like the Gas Emergency Plan and refiring coal plants are direct emergency actions to lessen the impact of an energy crisis. Other broad policies, such as new investments in green hydrogen, further illustrate the acceleration of *Energiewende*.

Implications

The findings of this thesis have multiple notable implications. First, an underlying conversation throughout this thesis is the relationship between RES and energy security. As suggested through the findings, RES may act as an efficient tool to achieve energy security. Therefore, if a nation uses energy security as a motivation for a clean energy transition, that may accelerate its energy transition without undergoing securitization. As seen time and time again, relying on energy imports, specifically fossil fuel imports, can lead to inconsistency or fear of scarcity, as in this case. Renewable energy allows resource-scarce countries to produce their own energy, and it is more secure than traditional sources, highlighting its compatibility with energy security. However, the purpose of renewable energy is generally limited to sustainability and climate change mitigation. Since energy independence is a top priority for many nations, placing renewable energy as the ticket to freedom from imports may accelerate an energy transition, as it subtly transforms renewables into a matter of security. This concept on a broader level may be an opportunity for further investigation.

Second, while the German government never abandoned the climate change mitigation motivation for RES expansion, the top priority was security following the invasion. This may have jeopardized the awareness around the need for climate change policies and the sustainable benefits of RES. Germany has been praised for their climate change awareness and public support. Since their energy transition is now a quest for energy independence, does this subtract from their credibility? Using an example from this case, when environmental considerations were no longer at the forefront of *Energiewende*, some of the emergency action taken directly contradicted environmental protection. For example, the significant relaxation of permitting, including EIAs. Conversely, the motivation for a clean energy transition may be irrelevant. The shifted motivation does not change the carbon-neutral properties of RES, it is still the most sustainable energy option, regardless of the reason for its implementation. This implication has been further explored in other applications of securitization in clean energy transitions.[383]

Finally, in a democratic country such as Germany, securitization inherently weakens the democratic decision-making regarding the referent object. This aspect of securitization has been studied by securitization scholars in the past.[384] That is present in this case, as the German government's official language claimed *Energiewende* would override public interest to accelerate its implementation. This is contrasted with Germany's claimed title as an energy democracy, including embracing the decentralized nature of RES.[385] Now that renewable energy is a securitized issue in Germany, the government may be challenged to return renewable energy to the democratically supported issue it once was.

[383]Sivonen and Kivimaa, "Securitization of Energy Transitions in Estonia, Finland and Norway."
[384] Sivonen and Kivimaa, "Securitization of Energy Transitions in Estonia, Finland and Norway."
[385]Szulecki, "Conceptualizing Energy Democracy."

Areas for Further Study

The findings of this thesis present many avenues for further research. I deem three areas to be the most pressing. 1. The impact of this shock on other European countries 2. The impact of geopolitical shocks on limited capacity countries' energy transitions 3. Further linkage of energy security and renewable energy. These areas are detailed below.

The era of clean energy transitions is on the horizon. However, the research of the impact of geopolitical conflict on renewable energy transitions is severely limited. Considering the importance of this topic and the wide variety of disciplines involved, there are many opportunities for future research. For example, how other European nations' renewable energy transitions were affected by the same flashpoint. Germany's significance, history, and politics make it unique and complex. The uniqueness of the country makes the *Energiewende* case fascinating, but exploring another European country's reaction to see consistencies or differences.

Furthermore, this case can be applied to other large economies and high-income countries, yet these findings would likely not apply to smaller economies and low-income countries. Germany was able to adapt quickly to secure an energy supply free from Russia due to their economic resources, diplomatic relationships, and governmental capacity. For a country with less ability, the outcome may look different. I suggest the impact of geopolitical shocks on a small economy and/or a low-income country's energy transition as an avenue for further study. Every country in the world is at risk for a depleted energy supply; the adaptation for countries with limited resources should be examined for a more diverse knowledge base.

Finally, this thesis explores the relationship between RES and energy security using a case study, but there is limited research into linking these ideas using theory. This would allow

scholars to apply the concept more widely instead of having to extract it from individual cases. Given the popularity of RES in the modern era, coupled with the ever-present need for energy security, it is vital for the relationship between the two to be understood. This knowledge would significantly contribute to the theoretical basis of modern-day energy studies.

Conclusion

Russia's invasion of Ukraine tested *Energiewende* in a way it had never been tested before. Beginning as a few policies to expand renewable energy to create a climate-conscious economy, it turned into one of the largest undertakings Germany has faced in the 21st century. While renewable energy had only been legislated and discussed as a carbon-neutral source before, a turning point permanently changed the way the country thought of the source. This shift turned renewable energy from simple sources to the fuel of freedom.

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