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## Germany and the Nuclear Energy Issue post-Fukushima – a multiple streams explanation

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**B. Sc. Thesis**

**by Moira A. J. Deuker**

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Thesis Supervisors:  
Prof. Dr. René Torenlid  
Dr. Le Anh Nguyen Long

Ref. no. of ethical approval: 200410

University of Twente  
Drienerlolaan 5  
7522 NB Enschede  
Netherlands

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## **Abstract**

This study aimed at explaining the variation from the status quo of the German government with its decision to phase out nuclear energy in June 2011, in response to the nuclear accident in Fukushima. The decision was analyzed using the Multiple Streams Approach (MSA) by Kingdon (1984), considering Birkland's (1998) theory of focusing events. A comparison with the German policy reaction to the Chernobyl accident was done. Qualitative data was collected during expert interviews and content analysis of newspaper articles. As hypothesized, the model was able to explain the variation observed in 2011 as well as the low key response in 1986: After Chernobyl the three streams were not aligned, due to a missing policy solution, an insufficiently prepared basis for change as well as the absence of a policy entrepreneur. After Fukushima a unique alignment of the streams occurred: In 2011 the issue was still perceived problematic, renewable energies were a trustable alternative technology and the topic was highly controversial and up-to-date due to a decision taken in 2010. Furthermore, Angela Merkel acted as a policy entrepreneur and furthered the alignment of the streams, which resulted in the German nuclear phase out bill in June 2011.

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## Introduction

On March 11<sup>th</sup> in 2011 Japan got hit by the worst earthquake since the beginning of the Japanese records with a magnitude of 9.0. This earthquake led to a tsunami with waves up to 14 meters height at the location of the nuclear power plant Fukushima Daiichi. The International Nuclear and Radiological Event Scale, INES, assessed the event as a major catastrophe, reaching level seven on a scale from one to seven. The incident has had dramatic consequences in Japan: around 20.000 deaths, millions of destroyed houses and a nuclear meltdown in several blocks of the Fukushima Daiichi power plant, leading to massive contamination of air and water as well as more than 100.000 people being evacuated, still not able to return to their homes. The emergency cooling, which was supposed to take effect after such events, was destroyed by the tsunami, as the plant was not sufficiently prepared for waves this high, which is seen as the main trigger for the worst case scenario nuclear accident. TEPCO, the operator of the Fukushima power plant, was profoundly criticized for not upgrading after studies in 2008 predicted waves up to 15 meters height (GRS, 2016). The Japanese government was blamed for its inadequate crisis management and it took more than a year until a nuclear phase out became reality in Japan. However, this decision was dismissed only months later. The country's Strategic Energy Plan, introduced in 2018, mentions a reduction of nuclear energy usage as far as possible and foresees a share of 20% for nuclear energy in the energy mix until 2030 (Agency for Natural Resources and Energy, 2018).

Yet, the accident received international attention over months and therefore has had non-physical consequences in other, non-directly affected, countries, too. The calamity triggered a complete turnaround of the German energy politics: Only three days after the accident in March 2011, the German government decided to immediately shut down their seven oldest power plants, established an ethical committee to define a societal consensus over the future usage of nuclear energy in Germany and assigning the Reactor Safety Commission (RSK) to do stress tests and ensure the safety of the German power plants (BMU, 2014a). The findings of the RSK were alarming, as all power plants were proven to require further examination (BMU, 2014b). In May 2011 the ethical committee concluded that the risks of nuclear power plants have not changed but are perceived differently after the Fukushima accident, offering an explanation for the massive protests against the further usage of nuclear energy after the accident. Therefore, they advised a permanent phase out within one decade (BMU, 2014a). On the basis of this, the German government passed the nuclear phase out bill (*Atomausstieg*) on June 30<sup>th</sup>, 2011, only 111 days after the accident. This decision regulates a complete and permanent shut down of all nuclear power plants until 2022 (Bundestag, 2011). With this decision, Germany was the first country worldwide to conclude a nuclear phase out in response to the Fukushima disaster. Still, the decision to change the nuclear law came as a surprise: Only in October 2010, five months before the Fukushima accident, the same German government decided to dismiss a previous decision, taken in 2000 to phase out its nuclear capacity, and thereby extending the lifetime of the plants which were still operating. A decision that was highly controversial and criticized (Arndt, 2016).

In contrast, Samuelson and Zeckhauser (1988) found that individuals are very likely to stay with the status quo, which often means staying with one's formerly taken decision. Furthermore, they prove that decisions are strongly based on individual preferences (Samuelson & Zeckhauser, 1988). Thus, the decision taken in 2011 could be interpreted as highly irrational: The decision makers do not only dismiss their own decision, meaning not taking the same decision twice but decide for an option which is rather costly, due to the transition costs the government needed to pay the plant operators as a compensation for an early shut down. Additionally, unlike proposed by Samuelson & Zeckhauser (1988), the German government - at that time a coalition of the conservative Christian Democrats (CDU) and the Liberals (FDP) - did make a decision that is not in line with their party political interests. Furthermore, the decision was made in a situation where the country and its citizens themselves were in no particular risk, due to the distance to the calamity itself and the absence of earthquakes and tsunamis in this region. With the decision to phase out the nuclear capacity Germany moves away from the European and Western status quo, which incorporates massive reliance on nuclear energy due to its efficiency and rather low CO<sub>2</sub>-emissions. Moving away from the status quo is, following decision theory (Samuelson & Zeckhauser, 1988), rather unlikely. Hence, it is scientifically interesting to understand why Germany took this rather irrational decision.

Moreover, no such high key decision was taken after the Chernobyl accident in 1986, even if this catastrophe has been worse in several aspects and was described as the worst-ever nuclear accident at this time. As a consequence of the accident, 350.00 people have been evacuated. 30 years after the explosion, more than five million people still live in radioactively contaminated regions. Furthermore, in contrast to the incident in Fukushima, the nuclear meltdown was man-made and thus, much more likely to happen elsewhere. Plus, major parts of Europe, including Germany, were directly influenced by the nuclear fallout which followed the explosion of the Chernobyl power plant and shaped its population's health and everyday lives (Arndt, 2016a). The contamination of the air with cesium and iodine through the Fukushima accident was found to equate only 10% of the air pollution after the Chernobyl disaster (GRS, 2016). In addition to that, the information management of both the Soviet and (West-) German government after the accident in Chernobyl was inadequate: The accident only became public because of extreme high radioactivity measures in Sweden, without any comment or plea guilt by the Soviets. The German government tried to cover the incident up and calm the public with the argument that German power plants differ from those in the Soviet Union and that no similar event could happen with the German technologies. However, only three weeks after this accident the Socialist Democrats Party (SPD), as well as the Greens, promoted a stepwise nuclear phase out, which did not find a majority at that time. The accident strengthened the already existing anti-nuclear energy movement, without having any real success until the first nuclear phase out bill which passed in 2000 (Arndt, 2016a).

This is especially interesting when keeping in mind that the Chernobyl accident did have influences on the energy sector in other European countries: After three referenda Italy concluded its

nuclear phase out in 1987. Poland never finished building its first power plant after this event, still never having used nuclear energy and Lithuania stopped the construction of an additional vessel (Arndt, 2016b). Thus, understanding why the decision by the German government to move away from the status quo was only made in 2011 is relevant, too.

The status quo can be seen as the reliance on nuclear energy, which is still high throughout Europe. There are currently 108 operating nuclear power plants in twelve countries in the European Union (EU), 57 of those in France. Additionally, six new plants are currently being constructed, one of them in France (IAEA, 2020). However, more and more countries, also in Europe, decide to move away from nuclear energy and start to engage more in other energy sources, mainly in renewable energies. Still, no European country followed the German example to this extent as no reaction came as fast and as extreme. Germany reacted with a permanent and definite shutdown of its nuclear power plants only months after the calamity in Japan and immediately shut down eight reactors, with the aim of a complete shutdown until 2022. Other countries, on the contrary, arrived at this decision much slower, shut down their first reactors only years after the decision, and planned a much slower phase out. Furthermore, the nuclear phase outs in other countries are less definite and often have been questioned and revised since they came into effect.

Especially with the European Green deal, as presented by the European Commission, the nuclear power issue came up again. During the negotiations, some member states tried to include financial support for nuclear energy, as a clean energy, in the proposal, however, in the final version, it was not included (Vorreiter, 2019). The discussions on European level stimulated further discussions in Germany: Parts of the CDU, as well as the right wing party Alternative fuer Deutschland (AfD), proposed the extension of term of the remaining German nuclear power plants, as the development of new wind energy plants in Germany is stocking. Nevertheless, the federal government, and the Bundestag fractions of SPD and FDP, rejected this proposal for different reasons (“Abkehr aus Klimaschutzgründen?”, 2019). The problem of final storage of nuclear waste is an important and highly controversial topic in Germany, as no location for the final storage is found yet, making the issue officially unsolved. According to the World Nuclear Waste Report 2019, this problem exists in every European country, yet Finland being the only one “currently constructing a permanent repository” (WNWR 2019, p. 9), making the topic of nuclear power plants a highly relevant topic throughout the European society. This brings up the question of why Germany completely discards nuclear energy from its energy mix while countries as France continue to build new power plants and obtain the majority of its energy from nuclear power sources.

The aim of this thesis is to offer an explanation for the unique decision of the German government to phase out its nuclear capacity in response to the nuclear accident in Fukushima, the so called German *Sonderweg* (“*special way*”). Therefore, the following explanatory research question was formulated:

*How can the rather radical policy measures of the German government in response to the Fukushima accident, such as the nuclear phase out bill, be explained on the basis of theories of collective decision making?*

Doing so, three main sub-questions will be elaborated: first, the mechanisms that contributed to this rather radical policy change in Germany will be identified, secondly, the low key reactions of the German government to the Chernobyl accident in 1986 will be described and explained. Lastly, the reactions of other European governments to the Fukushima calamity will be compared to the one of the German government. Thus, the sub-questions were formulated as follows:

*SQ 1: What mechanisms contributed to the rather radical policy change in Germany in response to the Fukushima accident?*

*SQ 2: How can, on the basis of theories of collective decision making, be explained that no such policy measures were already taken in Germany in response to the Chernobyl accident?*

*SQ 3: How can, on the basis of theories of collective decision making, be explained that Germany was the only Western country that took such policy measures in response to the Fukushima accident?*

In the subsequent section, the theoretical framework of this study is presented. First, an overview of decision making research will be given, introducing the approach used in this research. Second relevant research about the Fukushima nuclear accident is presented. Lastly, the established working hypotheses, which are going to be tested, are presented. This section is followed by the methodology, explaining the research design, operationalization, and data analysis of this bachelor thesis. In a next step the results will be presented.

## **Theoretical framework**

### *Theories of Decision Making*

Rational choice theories propose that decision makers strive for the optimal outcome in a certain situation - following their preferences (Brams, 1985; Samuleson & Zeckhauser, 1988; Shepsle, 2010). The decision makers in Germany, respectively the government, can be expected to act according to their party interests. In the particular case of this bachelor thesis, it would be the party interests of the FDP and CDU as liberal and conservative parties, which are known for taking pro-economy decisions and both campaigned with the lifespan extension of the German reactors in the election campaigns in 2009. The decision taken by the government in October 2010 reflects those party interests, as both parties rather were proponents of nuclear energy, for different reasons. Dismissing its own decision after less than a year, hence, is irrational and against the self-promoted party interests. Still, one could argue that even if it was not especially in the interest of the German government to dismiss its former decision and to shut down the nuclear capacity in response to the Fukushima accident, it may have been more



important and of higher interest to calm the public and keep its acceptance. However, Allais (1953, as stated by Basili, 2006, p. 1) found that in situations in which extreme events are involved, and the decision makers face higher risks (e.g. due to insufficient information) no optimal decision can be expected. In this context the Fukushima accident can be seen as an extreme event, certainly, the German government did face some risk, hence no rational decision with an optimal outcome for the government could have been expected. According to the theory of Elbanna (2006), the decision of the German government in 2011 can be interpreted as intuitional rather than rational: As public pressure increased, a fast decision without further assessment of the actual risk was needed, therefore the German government relied on its own judgments and its experience. Thus, rational theory seems non-optimal to explain the decision taken by the German government in response to the Fukushima calamity.

As a reaction and critique to rational decision theories, arguing that they were non-applicable in a complex, ambivalent, and steadily changing world, Cohen, March, and Olsen (1972) developed the garbage can model, a Multiple Streams Approach (MSA). Their argument is that there is no planned, rational decision making process following a perfect public policy cycle but rather four independent streams: The problems stream, the solutions stream, the participants stream, and the choice opportunities stream, that become compatible and hence, intersect. This junction of the four streams creates an opportunity for policy change. This idea has been taken over by various social scientists, most popular by Kingdon (1984), who revised the model into a three streams model. The problem stream includes all societal problems that require further attention. The policy stream incorporates potential policy solutions for yet no specific problem, which were developed in the exchange between political actors, experts, and interest groups. Hence, the policy stream combines Cohen et al.'s (1972) solutions and participants streams. Kingdon's (1984) politics stream developed out of the choice opportunities stream and describes changes in government or public interest. Kingdon (1984) also describes the streams as flowing independently from each other and coming together under certain circumstances only. Unusual events are described as circumstances which trigger the alignment of the streams, still, there are other possibilities that generate an alignment. The confluence of the three streams, according to Kingdon (1984), creates an open window for policy change, as participants are willing to address an issue, which increases the importance and attention to potential solutions for the problem. The streams are only compatible for a limited time. If no decision follows, the streams continue flowing independently. Zahariadis (1992) adds upon this and argues that the multiple streams approach is not only applicable in the political agenda setting but that a political decision is more likely after an alignment of the streams.

Birkland (1997) refined those ideas about the influence of extreme events on the public policy process and established a theory that explains the policy process after so called *focusing events*. By definition, a focusing event is a rare, unusual event, which gets a lot of public attention and therefore, offers the chance for political minorities or opposition parties to bring up new issues. Focusing events uncover political disagreement and further political conflicts and discussions, which increases the possibility of policy change. Baumgartner and Jones (2003) confirm those findings by observing that

focusing events increase the attention given to an issue, which leads to a more negative assessment of existing policies and opens the process by looking for alternatives. According to Birkland (1997), nuclear accidents can be defined as focusing events. He identifies two elements which are crucial for a nuclear accident to be focal: “the existence of an active, visible, well-established anti-nuclear movement” (p.127) that raises awareness as well as a safety conscious political arena. He argues that if a nuclear accident is to be defined as a focusing event, it is much more focal than other focusing events like Hurricanes, as the meaning of the event is unclear and requires more discussion (Birkland, 1997).

#### *General Theoretical Hypotheses about the Model*

This bachelor thesis uses the multiple streams approach as developed by Kingdon (1984), as it appears to be the most suitable approach to explain the variation observed. It will be used under consideration of Birkland’s (1997) findings, according to which the Fukushima nuclear accident can be identified as a focusing event, that offered the chance for political change in this policy domain. The application of this approach leads to the following general hypothesis:

*H1a: The Fukushima accident, as a focusing event, created a unique alignment of the three streams and, thus, an opportunity for policy change.*

Kingdon (1984) introduced the concept *policy entrepreneur*, which describes an individual which is able to use the created open window for policy change to achieve a desired outcome. According to him, this person is responsible for recognizing a need for change in a certain policy area during the slot of the open window and to identify potential solutions to comply with this demand. Thus, Kingdon (1984) proposes that policy change following the MSA is furthered and made possible through a policy entrepreneur. In the specific case analyzed Angela Merkel could have taken this role, therefore, the following general hypothesis was formulated:

*H1b: In the policy process after the Fukushima accident, as a focusing event, a policy entrepreneur existed who furthered the policy change: Angela Merkel.*

Interestingly, few political reactions in Germany followed the Chernobyl accident, which had much more direct influences on the country. Therefore, a closer look will be taken on the influence of the accident on the public perception in Germany. Most studies about the consequences of the Chernobyl accident on Germany focus on health issues or environmental pollution. Not many studies exist about the influences the accident had on the public perception of the German population.

Berger (2010) tested the influence of the Chernobyl accident on the worries about the environment of individuals in Germany and found that it increased after the accident but that this did not influence the general life satisfaction of the society. Peters, Albrecht, Hennen, and Stegelmann (1990) detected that the Chernobyl accident increased the percentage of people demanding a discontinuation of nuclear energy in Germany up to 71% shortly after the accident, with more than 40% wanting an accelerated nuclear phase out. According to the *Institut für Demoskopie Allensbach* (as cited

by Peters et al., 1990), only 15% of the German population were in favor of this before the accident. However, their study also showed that the nuclear accident did not change the basic pattern of public perception towards nuclear energy in Germany, as a majority still saw an economic need for using nuclear energy to ensure the energy supply. This is in line with the results of federal elections in 1987: The Greens, whose main demand was a nuclear phase out since its foundation, as well as the SPD, which changed its opinion about nuclear energy after the Chernobyl calamity, were expected to be extremely successful, however, the results did not differ much to the prior elections (Peters et. Al, 1990). Still, Pappi, Kurella, and Bräuninger (2019) found that the nuclear catastrophe in 1986 offered a possibility for the Green party to establish itself more in the German party system and gain more attention for its political goals. Those findings are in line with the lack of a direct political response, as observed after the nuclear accident in 2011, therefore the following general hypothesis was formulated:

*H2: The Chernobyl accident, as a potential focusing event, did not create an alignment of the three streams and, hence, no opportunity for policy change.*

#### *Contextualized Model Elements: The three Streams*

In the subsequent section, studies that concern the effects of the accident on the German politics and the German population are presented and potential mechanisms for the alignment of the three streams and the subsequent policy changed will be identified.

#### Fukushima (2011) and the Problem Stream: Risks of nuclear energy

Latré, Perko, and Thijssen (2017) found that the accident in Fukushima had a stronger negative impact on countries in which the debate about nuclear energy existed prior to the calamity. Kepplinger and Lemke (2016) state that especially in Germany the discussion about the usage of nuclear energy existed before the accident, due to the dismissal of the nuclear phase out bill from 2000 in October 2010. This discussion and the general debate about the issue rose again and was discussed anew after this accident (Kepplinger & Lemke, 2016). This proposes the following contextualized problem stream element:

*E1 (problem stream): The Fukushima accident, as a focusing event, brought the problems and risks of nuclear energy up again and, thus, facilitated political change.*

#### Fukushima (2011) and the Politics Stream: Societal Pressures

Studying the Fukushima case, Goebel, Krekel, Tiefenbach, and Ziebarth (2015) proved that extreme events, such as the Fukushima calamity, can have significant effects on the public perception of citizens in non-affected and geographically distant countries. They confirm that the Fukushima accident increased the perceived risk amongst the German population and that the decision to phase out nuclear energy in June 2011 reduced this fear again. Their findings are in line with the results of Richter, Steenbeck and Wilhelm (2013), concluding that the Fukushima accident influenced the public perception in Germany negatively whereas the decision for the nuclear phase out bill had a positive

influence on the environmental concerns of the German society. This is a confirmation and legitimation of the decision to phase out the nuclear capacity in response to the Fukushima accident.

Goebel et al. (2015) found that there was increased support for the Green party after the accident. Conformingly, Wittneben (2011) proposed five potential reasons that together could explain the radical decision of the German government to permanently phase out the nuclear energy capacity in 2011. The first cause she mentions are the upcoming regional elections in four Bundesländer in March 2011, which showed a massive increase in support for the Greens in Rhineland-Palatinate, Hesse, and especially in Baden-Württemberg, a former CDU stronghold in that the Greens won the election (Wittneben, 2011). Therefore, the following contextualized politics stream element was formulated:

*E2a (politics stream): The upcoming regional elections increased the pressures on the German government after the Fukushima accident.*

Additionally, Meyer and Schoen (2017) found that the change of direction of the CDU and the FDP prevented vote loss as their voters apparently became more skeptical about nuclear energy. The two parties, however, could not earn any additional votes. Accordingly, the following contextualized politics stream element was established:

*E2b (politics stream): The decision to permanently phase out the nuclear capacity by the German government in June 2011 was strongly motivated by electoral purposes.*

The findings of Goebel et al. (2015) also show that the reaction of the German population massively differs from the societal reaction in the UK and slightly from the one in Switzerland, which may be an indicator for the differing policy reactions in the three countries.

The second cause proposed by Wittneben (2011) is the intense and perseverative media coverage of the Fukushima accident, which led to more attention of the issue within society. Furthermore, Kepplinger and Lemke (2016) show that German and Swiss media placed an emphasis on the nuclear accident and drew a connection to domestic plants, in contrast to British and French media which mostly reported about the natural disasters without drawing conclusions to their nuclear programs. The study states that the media coverage after the Fukushima disaster was an intensifier of previously existing debates, in which the media had direct effects on decision makers as well as indirect effects on political decisions via public opinion (Kepplinger & Lemke, 2016). This proposes the following contextualized politics stream element:

*E2c (politics stream): The persistent media coverage of the Fukushima accident in the German media influenced the perception of nuclear energy and its risks within the German population.*

A third cause proposed by Wittneben (2011) is the unique history in nuclear resistance which Germany allegedly has. Unfortunately, no other scientific article mentioning this could be found. Still, the following contextualized politics stream element was formulated and is going to be elaborated:

*E2d (politics stream): Germany has a unique history of nuclear resistance.*

According to Wittneben (2011) another aspect that played a role in Germany after the Fukushima accident was the perceived cultural proximity to Japan. Thus, even if Germany was not directly affected by the accident the fact that a nuclear accident with this disastrous consequences can happen in a developed and high-tech nation, such as Japan, influenced the view on nuclear energy within the German society (Wittneben, 2011). Therefore, the subsequent contextualized politics stream element was developed:

*E2e (politics stream): The perceived cultural proximity to Japan positively influenced the fear of the risks of nuclear energy within the German society after the Fukushima accident.*

#### Fukushima (2011) and the Policy Stream: Alternative Technologies

Furthermore, Wittneben (2011) proposes that at the time the nuclear accident in Fukushima happened the trust in alternative technologies, especially in renewable energies, had massively increased in comparison to the time of the Chernobyl accident. Fittingly, 62% of German participants of a GlobeScan survey (2011) indicated that they believe that energy generated from nuclear and coal-fired power plants can be replaced by renewable energies within the next 20 years. Another poll found that in 2014, more than 90% of the German society are in favor of an expansion of renewable energies (Agentur für Erneuerbare Energie, 2014). Zoellner, Schweizer-Ries & Wemheuer (2008) prove that already before the accident in Fukushima renewable energies were widely accepted within the wider society. This proposes the following contextualized policy stream element:

*E3 (policy stream): In 2011 alternative technologies, such as renewable energies, were available and trustable.*

As a general overview, these two hypotheses and three contextualized model elements as presented above, propose a unique alignment of the three streams after the Fukushima accident as a focusing event as illustrated in figure 1:

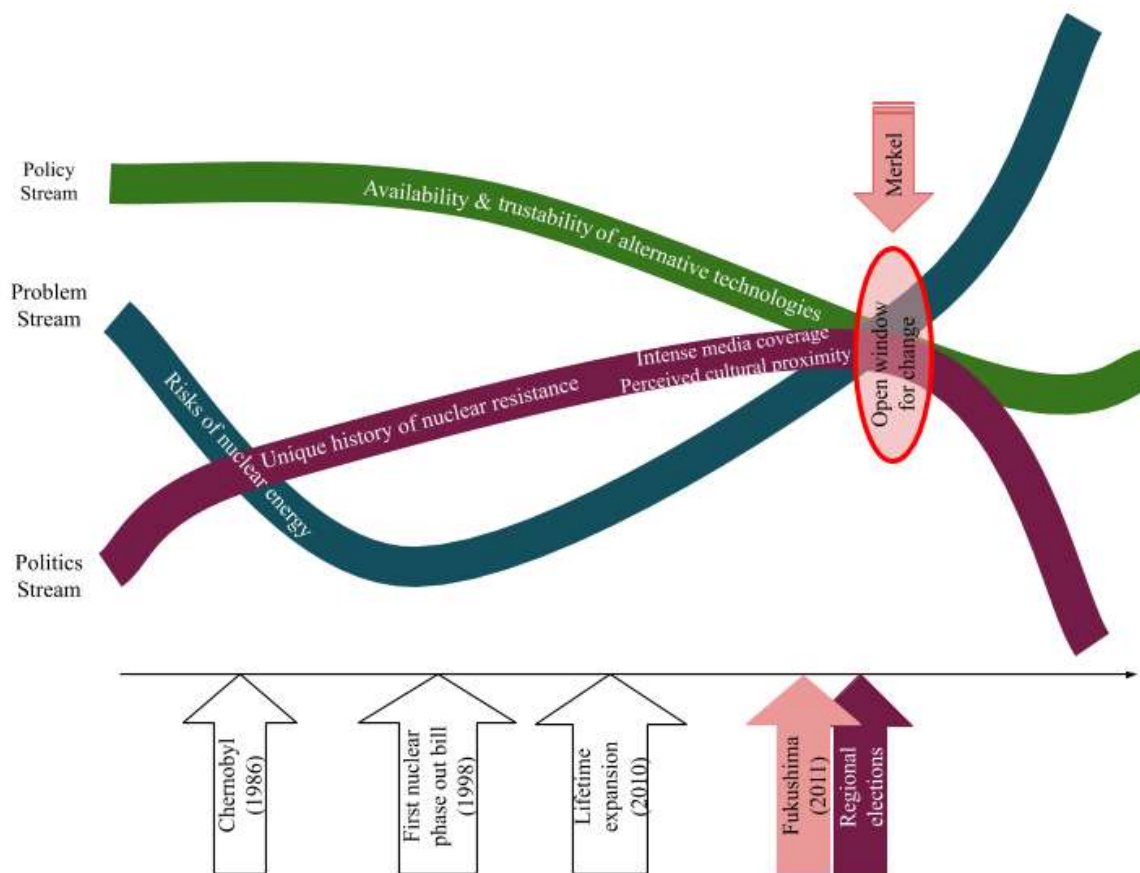


Figure 1: model of Germany and the nuclear energy issue according to the MSA by Kingdon (1984)

## Methodology

### Research Design

This research aims at tracing the chain of causal events that triggered a certain event, namely the rather radical reaction of the German government to phase out its nuclear capacity in response to the Fukushima accident in June 2011; a decision which strongly deviated from the status quo. Hence, causal-process tracing will be used (Blatter & Haverland, 2014). This theory informed reconstruction allows to test alternative explanations for the observed variation against each other and to find the prevailing one. Doing so, the MSA by Kingdon (1984) will be applied and, thus, tested, which might lead to an adaption of the model to make it applicable in other contexts. This will be done by identifying mechanisms and conditions under which a policy entrepreneur was able to connect the multiple streams and, in this way, further radical policy change in the chosen case. This concept of realistic evaluation was originally developed by Pawson and Tilley (1997), who established the idea that “causal outcomes follow from mechanisms acting in contexts” (p.58). These mechanisms which triggered the given outcome in this specific case should then be usable to explain other cases of rather radical and irrational decision making processes (Pawson & Tilley, 1997). However, another possible outcome of this research may be the conclusion that the MSA is not able to explain the variation of Germany moving away from the status quo with this particular decision.

Several possible threats to validity, as well as reliability of the research, may have arisen. A possible threat to internal validity might have been that the researcher, as well as the interviewees, faced retrospective bias, meaning that the perspective on the past event differs and that information might be forgotten due to the time difference between event and interview. In this study, retrospective bias was countered using data triangulation, thus, by looking for proof of the statements of the interviewees in scientific articles and official documents, as well as in the subsequent interviews. Data triangulation also counteracted respondent bias. Furthermore, respondent bias was countered by interviewing experts with different opinions and perspectives. Another threat to validity may have been the fact that the decision that will be analyzed did not happen in a laboratory, thus other mechanisms might have influenced the event, which might stay unnoticed. This was countered by staying objective and not favoring any explanation over others. Furthermore, researcher bias could have evolved and influenced the course of the interviews as well as the coding and interpretation of those interviews. This was countered by asking open questions, having a pre-set question catalog to be used in all interviews, which is just complemented to test the hypotheses of other interviewees, recording the interviews, and documenting as much as possible. Furthermore, one could ask peers for secondary coding<sup>1</sup> to prevent respondent bias. Interviewing experts with contradicting political views and opinions ensured multidimensional insights into the topic and prevented researcher subjectivity. Reliability was generally insured by accurate documenting as well as peer review and interviewee review of the collected information and the researcher's interpretation of it. Moreover, the project might be hard to replicate, as it is a small-N case study, which uses qualitative rather than quantitative data, however, it was more adequate to use a qualitative design to explain the German *Sonderweg*.

### *Case selection*

The case studied in this bachelor thesis is the decision of the German government to permanently phase out its nuclear capacity, which was taken in response to the Fukushima accident in 2011. The case was chosen using purposive sampling. The case is not representative, as the decision described represents a deviation from the status quo, and is thus, no typical case. The decision rather came unexpected hence it is an extreme or deviant case. The case was selected to find mechanisms that explain and understand such variation.

The case can, however, be seen as representative and typical for unexpected and radical policy making. This also implies that the causal mechanisms revealed in the present case study could be generalized to other contexts that exhibited surprisingly radical policy decisions. Understanding this particular case may lead to further understanding of similar cases, as well as it offers a chance of using the mechanisms identified to further radical change in other situations. The chosen case is able to inform us about the applicability of the general model of Kingdon (1984) in specific decision-making contexts.

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<sup>1</sup> However, asking peers for additional coding was not possible within the time scope of this Bachelor thesis.

### *Operationalization*

This bachelor thesis uses qualitative data only. A combination of existing data and newly collected data facilitated the answering of the research question. An analysis of 39 newspaper articles published in relevant German media was conducted to offer a further understanding of the mood within society and politics. A list of the articles analyzed can be found in Appendix A.

Within the time frame of this bachelor thesis, four German daily newspapers were chosen to be used: The rather system-critical and green-left daily newspaper *die tageszeitung (taz)*, the center-left daily *Die Sueddeutsche Zeitung (SZ)*, as well as the middle class-liberal-conservative newspaper *Die Welt*, and the boulevard magazine *Die Bild*, as the newspaper with the highest circulation within Germany. They were scanned for articles of four categories: First, for articles that concern the time and reaction of the German government and population after the nuclear accident in Chernobyl in 1986. Due to availability and the limits of this study, these are retrospective articles written in the 2010s rather than articles written in the time shortly after the accident. This, on the one hand, may also further retrospective bias, on the other hand it may give better overviews and insights into the situation than older articles could have. In this category, ten articles were analyzed. The second category of articles searched for concern articles about the October 2010 decision of the German government to extend the life spans of the remaining reactors and hence to stop the nuclear phase out bill from 2000, the so called *Ausstieg aus dem Ausstieg (exit from the exit)*. Only eight articles were chosen to be analyzed in this category. Category three concerns articles about the Fukushima disaster and the short-time reactions to the accident within Germany. This category contains nine articles. The fourth category includes articles about the final decision for the nuclear phase out bill by the German government in June 2011. Consisting of twelve articles, this is the largest category of articles analyzed. The number of articles in each category differs for reasons of availability and relevance. Furthermore, the articles within one category are not equally distributed amongst the four newspapers but rather reflect the number of relevant articles that could be found per category and newspaper and is not connected to the researcher's personal preferences or interests.

Moreover, new data in form of expert interviews was gathered, to get further alternative explanations for the German decision to phase out its nuclear capacity as a response to the accident at the Japanese nuclear power plant Fukushima Daiichi. In total eight interviews were conducted between May 15 and June 2, 2020, with experts from different sectors and with different political perspectives and opinions. As all interviewees and the researcher are German the interviews were conducted in German, the notes taken during the conversation were later translated and textualized. Those minutes can be found in the data appendix. Due to the current circumstances<sup>2</sup> the interviews were done as video- or phone calls, depending on the preferences of the interviewee. All interviews were recorded as audio files and are safely stored with the researcher. The interviews took between 21 and 56 minutes, depending on how talkative the interviewees were and how detailed they explained their points. Still,

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<sup>2</sup> In March 2020 Europe was massively affected by COVID-19.



the length of the interview did not determine the quality of the information received. All experts were chosen due to their expertise, meaning they have all been concerned with the German nuclear phase out bill in their professional lives.

Two of the experts interviewed are journalists, Respondent 1 is working for the ZDF and Respondent 2 for the Spiegel, thus representing two highly relevant news providers in Germany. Both journalists have been extensively reporting about the Fukushima disaster in 2011 and its consequences in Germany, which presumes a certain knowledge about the calamity in Chernobyl in 1986, too. In contrast to the other interviewees, they were expected to have a less subjective view on the events, as they are not bound by any (party) political view. Two other experts interviewed can be described as lobbyists. Respondent 3 is the founder of the citizen's initiative in Lower Saxony which campaigns for a nuclear phase out since the late 1970s, hence represents an anti-nuclear perspective. The other lobbyist interviewed, Respondent 4, represents the opposite perspective, as he works for a nuclear technology association in Germany. The other four interviewees are representatives of four of the five German parties relevant in 2011, namely the FDP as governing party and the SPD, the Greens, and the Lefts as political opposition. Unfortunately, no CDU representative was willing or had time to answer my questions, solely one MP (Respondent 5), who is a member of the committee for the environment, nature conservation, and nuclear safety was willing to write a short personal evaluation, which will also be included in the analysis. The representative from the FDP, Respondent 6, was a member of parliament between 2005 and 2013. Plus, he is the chairman of the federal expert committee for the environment, nature conservation, and nuclear safety of his party, a position which he also had in 2011. The expert interviewed from the Lefts, Respondent 7, is an MP since 2005 and the umpire of his party in the committee for the environment, nature conservation, and nuclear safety. The interviewee from the Greens, Respondent 8, has a life-long connection to the anti-nuclear movement, fighting for a nuclear phase out since the late 1970s, which she also expressed in her time as MEP from 2004 till 2019. The longtime environmental spokesperson of the SPD, Respondent 9, who also is a member of the final storage committee, was interviewed.

A question catalog consisting of four blocks was used during all interviews (see Appendix B). The first question block concerns the societal sentiment after the Fukushima accident and aims at refining the contextualized model elements E1 as well as E2c, d, and e. The second question block is more focused on the sentiment and discussion within the government and parliament and thus aims at testing H1b and the contextualized model elements E2a and b. Furthermore, the assessment of the accident is questioned. Question block three focuses on the developments post Chernobyl, testing H2. All three question blocks also ask for the influence of lobby groups after the accidents. The last question block compares the two accidents and aims at testing H1a and the contextualized model element E3, showing the uniqueness of the alignment of the three streams after the accident in Fukushima and thus explaining the resulted policy change. All questions were formulated as open as possible. New insights and partial explanations developed by interviewees were picked up for subsequent interviews and

reformulated into new questions, such as the influence of the unsolved final storage issue on the public perception of the German society.

### *Data Analysis*

The data collected during the interviews and the content analyses provides different alternative explanations and mechanisms for the extreme case studied. These alternative explanations and mechanisms were identified and analyzed using a codebook (see Appendix C) and the program Atlas.ti. The codebook consists of four code groups which reflect the four question blocks developed for the interviews: The first code group is named *Fukushima\_Society* and originally contained five codes which were used when an interviewee or article mentioned or described the sentiment within the German society in the context of the Fukushima nuclear accident using a certain argument such as making a historical reference. Starting from document D26 a sixth code, called *cultural proximity*, was added to that group. The second code group, which is called *Fukushima\_Politics*, contains six codes. Those codes are applied when a participant or article refers to the mood within the German government in the context of the Fukushima nuclear accident. Code group three, *Chernobyl*, incorporates five codes that refer to different aspects of the Chernobyl accident in 1986, such as the political or societal reaction or the influence of the media at that time in Germany. The fourth group of codes used is *differences* and aims at finding statements concerning differences between the situations in Germany after the nuclear accidents in Chernobyl and Fukushima, to find mechanisms that aligned the three streams after the Fukushima accident and that were missing after the catastrophe in Chernobyl. The group consists of three codes, which are used to analyze mentioned differences in mentality, priorities, and technologies available after the Chernobyl disaster and after the Fukushima calamity.

The mechanisms that were identified as being important in furthering policy change were then used to reconstruct the situation that generated the decision of the German government to phase out its nuclear capacity post-Fukushima using causal process tracing (Blatter & Haverland, 2014). This was done applying the multiple streams approach by showing what mechanisms were needed to create the alignment of the streams and generate this policy outcome. Furthermore, the outcome the Fukushima accident triggered was compared with the situation in Germany after the Chernobyl disaster, as well as with the circumstances in other European countries post-Fukushima. This led to a clear definition of the mechanisms that facilitated the unique alignment of the three streams in Germany after the Fukushima disaster in 2011 and which opened the opportunity for such radical policy change. Additionally, it was tested whether the MSA is able to predict what happened and if the prevailing alternative explanation matches the model, which proves the generalizability of the model to other contexts of radical decision making. In the subsequent section, the findings are presented.

## Results

The most striking finding was that, against all expectations, almost all interviewees and newspapers did more or less agree on all issues. Furthermore, it was found that the decision to phase out the nuclear capacity in this specific situation was not perceived as irrational by most interviewees, especially when taking the sentiment within the wider society after the accident into account. Table 1 shows the density of the twenty codes within the 48 documents analyzed: In total 348 text passages were marked. The code which occurred most often was Fukushima\_Politics (risk proof). Another code which was used rather often was the German history code. The code individual politician in the context of Chernobyl was only used once. The meanings of those findings for this bachelor thesis will be further elaborated in the subsequent sections.

Fukushima_Society (unsolved final storage issue)	12
Fukushima_Society (protests)	28
Fukushima_Society (media coverage)	14
Fukushima_Society (lobby groups)	13
Fukushima_Society (German history)	43
Fukushima_Society (cultural proximity)	12
Fukushima_Politics (upcoming elections)	28
Fukushima_politics (risk proof)	47
Fukushima_Politics (pressure)	15
Fukushima_Politics (lobby groups)	18
Fukushima_Politics (individual politician: other)	4
Fukushima_Politics (individual politician: Merkel)	8
differences (technology)	15
differences (priority)	7
differences (mentality)	24
Chernobyl (societal reaction)	21
Chernobyl (media coverage)	12
Chernobyl (lobby groups)	10
Chernobyl (individual politician)	1
Chernobyl (government reaction)	26

Table 1: density of all codes

The findings are presented analogously according to the theoretical model (MSA), as hypotheses one through three built on the results and findings that concern hypotheses four through nine.

### *The Problem Stream*

The contextualized problem stream element E1 was determined to refer to the problem stream at the time of the Fukushima accident, which according to Kingdon's theory (1984) highlights an existing problem. The tabloid Die Bild<sup>3</sup> describes the accident as a catastrophe which "upset, yes destroyed, the belief in the controllability of nuclear energy", the Süddeutsche Zeitung<sup>4</sup> cites Green's politician Künast who argued that the accident showed that the nature is more powerful than mankind. Furthermore, as Respondent 6 stated, it was proven that the German power plants might be fallible, too, a risk, which, according to Respondent 3, the wider society did not want to live with anymore. Up until this accident, Respondent 7 stated, it was generally assumed that nuclear energy as used in Germany was a safe technology, the accident in Fukushima prove the opposite. This shows that the nuclear accident in Fukushima in 2011 was uniformly described as a proof for the risks of nuclear energy, defining its ongoing usage as a problem perceived within society. This feeling was, according to the interviewees,

<sup>3</sup> Bild, „CDU muss Atomfehler bekennen“, 24.04.2011

<sup>4</sup> Süddeutsche Zeitung, „Merkel beruft Krisengipfel ein“, 12.02.2011

triggered and thus brought up by the nuclear catastrophe in 2011. Hence the contextualized problem stream element was confirmed.

Furthermore, another issue needs to be added to the problem stream: the final storage issue. According to Respondent 4, the issue was irrelevant in the time directly after the nuclear catastrophe in Japan. However, Respondent 9 argued that the topic has been important in Germany over years and that it has always been connected with massive protests. It can, therefore, be concluded that the topic may not have triggered the decision to phase out the nuclear capacity in Germany, however, it did influence the perception of the wider society pre-Fukushima and thus needs to be included in the problems stream.

### *The Politics Stream*

According to Kingdon (1984) the politics stream reflects the mood and changes within society and government. The fact that NGOs such as Greenpeace, the SPD, the Green party as well as five Bundesländer filed a law suit against the federal government after its decision to extend the life spans of the remaining reactors in 2010<sup>5</sup> shows the government was under immense pressure. Further societal pressures were added after the nuclear accident in 2011 which happened at a time of discussions and protests against nuclear energy, as a “feeling that something went wrong with the decision before” arose, Respondent 1 explained.

The politics stream cannot be analyzed using one code or variable only. In the following it will be investigated under the aspects of upcoming regional elections, which might have increased the pressures on the government; media coverage of the accident in German news media; the potentially perceived cultural proximity to Japan; the unique history of nuclear resistance in Germany; and the influence of lobby groups on the public perception and the government.

It was theorized that the pressures on the government were increased due to upcoming regional elections in four Bundesländern, and thus, that the decision taken by the government in June 2011 was strongly motivated by electoral purposes. According to Respondent 4, “The regional elections had an influence on the behavior of the German government”, especially after the CDU noted massive vote losses in Baden-Württemberg. Respondent 8 argued that the influences of the accident on the public perception were already visible during the election campaign in Baden-Württemberg, where the support for the Green party increased massively. Therefore, E2a was refined. “It now once again is all about gaining as much political capital as possible with the decision.”, states the *Süddeutsche Zeitung*<sup>6</sup>. The *Welt*<sup>7</sup> writes that “The Chancellor faces the next act, the elections, and announces the nuclear moratorium.”. No matter what newspaper, the electoral purposes behind this change of course, which started with the moratorium and resulted in the final decision to end the usage of nuclear energy in Germany, were obvious. Respondent 2 called it “a decision which was shaped by electoral purposes”,

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<sup>5</sup> *Welt*, „Greenpeace klagt gegen AKW-Laufzeitverlängerung“, 03.02.2011

<sup>6</sup> *Süddeutsche Zeitung*, „,Dieser Ausstieg ist unser Ausstieg“, 30.06.2011

<sup>7</sup> *Welt*, „Ausstiegstheater auf dem Rücken der Erdbebenopfer“, 15.03.2011

Respondent 9 and 1 added that the political turnaround solely aimed at preventing further vote loss, thus being purely tactical, rather than it originated from a change of mind, confirming E2b.

Fukushima not only happened at times of massive protests but also at the times of the internet, which offers information in live tickers as well as pictures and videos from the accident location<sup>8</sup>. This, on the one hand, makes the accident more real and literally brings it to everybody's living room<sup>9</sup>. On the other hand, as Respondent 3 stated, "there was no chance to cover anything up", as the news published this fast. According to Respondent 4, the accident and its consequences have been a topic in the German news media over months, whereas in other countries it was rather quickly overlain by other topics. A reason for this could be the fact that the antecedent decision already got a lot of media attention, as Respondent 7 stated. Media coverage, hence, was found to be influential, however, as an intensifier rather than as a main mechanism, reflecting the mood within society. This is in line with the contextualized model element E2c.

According to the *Süddeutsche Zeitung*<sup>10</sup> nuclear energy and the connected "nuclear dissensus is much more than a political conflict; it is one of the identity-forming topics in Germany." The fact that nuclear energy is such an important issue is historically motivated and originates in the post-world war two era, as stated by several newspapers and interviewees. Two articles<sup>11</sup> drew a connection between the antipathy against nuclear energy and the guilt of having said and done nothing against the rise of the Nazis. However, another historical connection was mentioned more often: The movement against nuclear energy resulted out of the movement against (nuclear) weapons and the fear of the nuclear death. Respondent 2 argued that "In Germany, nuclear energy generally is an ideologically charged topic, which started to gain importance in the 1970s and 80s, when the topic of rearmament came up in post war Germany.". Fittingly, Respondent 9 called nuclear energy "a topic of high sensibility within Germany, already since the 1970s". Respondent 3 went even further stating that "the German Sonderweg is deeply enrooted in the antipathy against war and weapons and without the German history one could not explain the general anti-nuclear sentiment within the German society". According to Respondent 6, the anti-nuclear movement started before the accident in Chernobyl, however, the catastrophe moved the topic more to the center of society and was "the basis of the skepticism against nuclear energy of the wider society". Not only has the topic always been important in Germany, there have always been protests in this context. An article in the *Bild*<sup>12</sup> reports about first protests against nuclear energy directly after the launch of the first nuclear power plants within Germany. Respondent 4 expressed that the political discussion about the topic is "very intensive in Germany" and one big thing the political camps built upon. He adds that there have always been massive protests, starting with the building of the plutonium regeneration fabric and the yearly castor transports, making the topic always omnipresent.

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<sup>8</sup> *Süddeutsche Zeitung*, „Der GAU erreicht das Wohnzimmer“, 14.03.2011

<sup>9</sup> *Süddeutsche Zeitung*, „Der GAU erreicht das Wohnzimmer“, 14.03.2011

<sup>10</sup> *Süddeutsche Zeitung*, „Atomarer Glaubenskrieg“, 19.03.2011

<sup>11</sup> *Bild*, „„Anti-Atomproteste spiegeln Schuldgefühle wider““, 16.04.2011 and *Süddeutsche Zeitung*, „Atomarer Glaubenskrieg“, 19.03.2011

<sup>12</sup> *Bild*, „Das ist Deutschlands umstrittene AKW-Geschichte“, 14.03.2011

Thus, the topic has always been important and highly controversial in Germany, refining model element E2d.

An issue which was especially striking after the accident in Fukushima in 2011 is the fact that a high-tech and developed nation like Japan was not able to control this technology, as almost all articles and all participants mention. “Chernobyl could be dismissed as the failure of a bankrupt communist system. The current nuclear accident, however, occurred in a highly industrial civilization with a distinctive risk culture.”, is part of an article in the *Welt*<sup>13</sup>, written shortly after the accident, which marks a major difference between the accidents. Respondent 2’s argument that the “cultural proximity to Japan with its high quality technologies” let the German nuclear technologies appear more vulnerable and fallible meshes with this. Respondent 7 described the cultural proximity to Japan as a main reason for the rethinking of the German government. This shows that the place and culture of the country the accident happened in influenced the mood within the German society, hence, E2e was confirmed.

During the interviews and the content analysis the influence of lobby groups on the public perception as well as on the discussion of the government was tested, yet no sufficient proof was found. Respondent 6 argued that actually no lobby work was needed after this accident, as the position of the NGOs such as Greenpeace as well as of the energy industry were clear and did not change after the event. Respondent 8 agreed with that saying that the position of the population was already manifested. If any lobby group would have made a change, then, according to Respondent 1, it would have been the NGOs influencing the public perception by “reducing the trust in the energy industry”. The government, however, was accused of having been influenced by the energy industry when deciding on expanding the life spans in 2010 multiple times. Still, there was consensus that their influence was small after the accident, as they, as Respondent 8 said, “relatively fast saw that did not have any chance anymore”.

### *The Policy Stream*

The policy stream is the stream which contains potential solutions for potential problems (Kingdon, 1984). The problem defined in this case is nuclear energy usage in Germany due to its risks and the unsolved final storage issue. A potential solution for this is the usage of alternative energy sources, such as renewable energies. It was uniformly stated that in 2011 there were real alternatives<sup>14</sup>, whereas at the time of the Chernobyl accident no realistic alternatives for nuclear energy existed<sup>15</sup>. According to Respondent 9 “at the time of Chernobyl, the ground was not sufficiently prepared for this change, at the time of Fukushima, when Germany already once was on that way to more renewables, it was, as it was clear that there are working alternatives.”. This means that not only were alternatives available but they were already proven to be trustworthy. An article in the *Welt*<sup>16</sup> adds the findings of a committee that “a

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<sup>13</sup> *Welt*, „Es gibt keine Argumente mehr für die Atomkraft“, 17.03.2011

<sup>14</sup> *Bild*, „Wie teuer kommt uns der Atomausstieg?“, 11.03.2011

<sup>15</sup> As confirmed in the interview with Respondent 2

<sup>16</sup> *Welt*, „Das Ende der Atomkraft ist nicht mehr aufzuhalten“, 05.05.2011

Europe-wide system based on renewable energies is technologically doable as well as profitable.” This refines the contextualized policy stream element E3.

#### *Application of the Model*

Angela Merkel is one of the most influential politicians in the world and for sure the most influential one in Germany. Therefore, it was hypothesized that in the decision making process post Fukushima she took the role of a policy entrepreneur and furthered the alignment of the three streams and the resulting policy change. All interviewees were asked for individual politicians who stood out during this process. According to Respondent 2, Angela Merkel played an important role in this decision and that “without her as a Chancellor the situation would have turned out differently”. Fittingly, Respondent 9 said that the decision to phase out the nuclear capacity in Germany was more or less an individual decision of the Chancellor. If Merkel “would not have demanded a change of course of her party, this would not have happened like this”, Respondent 1 admitted. Additionally, when talking about the decision the interviewees generally referred to “Merkel’s decision” or mentioned her instead of the government. Moreover, only few respondents mentioned other individual politicians which played a key role, such as Norbert Röttgen<sup>17</sup>, or the chairs of several fractions of the Bundestag<sup>18</sup>, however, no consensus about their importance was reached. In contrast to that, wider agreement about the importance of Angela Merkel in this process was established. This shows that Merkel was a key figure in this decision and that she potentially took the role of a policy entrepreneur, confirming H1b.

It was, therefore, confirmed that the risks of nuclear energy, as well as the therewith connected unsolved final storage issue, were perceived as a problem within the wider German society. Furthermore, a trustable alternative technology, hence a solution for the problem, was available. The sentiment within society and government shows that they were open-minded for change and thus the ground for political change was sufficiently prepared. The nuclear accident in Fukushima, as a focusing event, with Angela Merkel as a policy entrepreneur, did thus create a unique alignment of the three streams and opened a policy window for change. This opportunity was successfully used and on June 30, 2020, resulted in the nuclear phase out bill. Thus, H1a was confirmed, too. Moreover, it can be concluded, that the MSA by Kingdon (1984) is able to explain the decision by the German government to phase out its nuclear capacity in response to the nuclear accident in Japan in 2011.

#### *Chernobyl as a potential focusing event*

One of the key questions of this study was why the Chernobyl accident, in comparison to the Fukushima disaster, did not result in so drastic political change. It was hypothesized that no alignment of the three streams took place and thus there was no opportunity for change. The content analysis was used to gain a better understanding of the situation post Chernobyl in Germany.

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<sup>17</sup> As confirmed in the interview with Respondent 8

<sup>18</sup> As confirmed in the interview with Respondent 7

The reaction of the German government was described as, a short period of covering the accident and the potential consequences for the German population through the nuclear fallout up<sup>19</sup>, followed by the claim that everything is now under control<sup>20</sup> and “successfully convince the society that an accident like this could never happen in Germany”, as Germany and the German technologies were superior, said Respondent 2. A reason for the position taken by the government could be, according to Respondent 9 and 1, the importance and power of the nuclear lobby and its close connection to the nation state. Still, it would be incorrect to argue that there was no political reaction: Most importantly, the German ministry for the environment, nature conservation, and nuclear safety was founded due to responsibility and communication problems after the nuclear accident 1986<sup>21</sup>. Furthermore, “football matches were canceled, open air swimming pools and playgrounds were closed, sandboxes cleared, and vegetables plowed”, as the Welt<sup>22</sup> reports. Respondent 6 adds that the building stop of the regeneration fabric in Wackersdorf and the local protests were a reaction to the accident as well. According to the tageszeitung<sup>23</sup> the accident also influenced the decision to phase out five of the east German power plants straight after the reunification, due to their Soviet building technique. Several interviewees, such as Respondent 8, stated that the most important consequence the accident had on the German politics was the “political turnaround of the energy politics of the SPD”, and Respondent 3 argued that “only because of this change in opinion, there was a conflict between the fractions”, without which a nuclear phase out bill may not have happened until today. This shows that the Chernobyl accident did influence the German politics, however, no such radical policy change, as observed after the Fukushima calamity, happened, which indicates that there might not have been an alignment of the streams.

Interestingly, almost all interviewees agreed that even if there was no big political change and a nuclear phase out after Chernobyl, the catastrophe still politically changed Germany. Respondent 8 said that “Chernobyl completely changed the attitude towards nuclear energy”, the tageszeitung<sup>24</sup> mentions the strengthening of the anti-nuclear movement and the start of a political discussion about the usage of nuclear energy as the societal consequences of the calamity in Germany. Still, as an article in the Welt<sup>25</sup> describes it, no political change was demanded by the wider society, because “as big as the disconcertment may have been for the moment, as short was the half-life of the nuclear fear”. This may have something to do with the media coverage of the incident: On the one hand, little was known about the accident as it was kept secret by the Soviet authorities, as well as there was generally not much known about nuclear energy and its risks within the wider society<sup>26</sup>. On the other hand, Respondent 6 reports that “society was less skeptical, also because there were fewer possibilities for the media, no

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<sup>19</sup> As confirmed in the interview with Respondent 1

<sup>20</sup> SZ, „Erinnerungen an Tschernobyl“, 10.05.2011

<sup>21</sup> Tageszeitung, „Eine Katastrophe verändert die Welt“, 25.04.2016; confirmed in the interviews with Respondents 5 and 3

<sup>22</sup> Welt, „Bayerns Pilze und Wildschweine strahlen immer noch“, 22.04.2016

<sup>23</sup> Tageszeitung, „Ich habe Angst um die Konzerne“, 26.04.2016

<sup>24</sup> Tageszeitung, „Getrenntes Erinnern“, 27.04.2016

<sup>25</sup> Welt, „Ausstiegstheater auf dem Rücken der Erdbebenopfer“, 15.03.2011

<sup>26</sup> Tageszeitung, „Vor der Entwarnung wird gewarnt“, 28.05.2017



social media, and internet”. Media coverage was dominated by experts who aimed at calming the public only, as stated in an article in the *tageszeitung*<sup>27</sup>. Furthermore, Respondent 3 states that “the accident was rather fast overshadowed by other topics”. Still, the accident did influence the public perception on a longer term, as only after the accident, the anti-movement grew, and the acceptance and influence of the Greens increased.

Another variable that needs to be taken into account when analyzing the reactions to the Chernobyl nuclear accident in Germany is the time it happened in: The reaction of the German society, to not demand a nuclear phase out, even if the accident massively increased the mistrust in the technology, can be by more imminent threats, which appeared more realistic than a nuclear accident in the German power plants. According to an article in the *Bild*<sup>28</sup>, “it was not possible to phase out nuclear energy without massive consequences for the economic stability, the job security and ecology”. According to Respondent 2, the reliance and support for nuclear energy originates from the aim of being independent from oil and gas imports and to ensure an energy supply, a strong economy and thus welfare. Respondent 4 stated that next to the fear of energy shortage the low costs of nuclear energy overweighed the demand for further risk prevention.

Not only did the society have other priorities but as stated by Respondent 2, Germany was in a completely different state, politically as well as mentally; “a time with a completely different setting”, as Respondent 1 said. In the opinion of Respondent 2, “the society was just not at the point to think about a nuclear phase out”, as only after this incident, the topic moved closer to the center of society, said Respondent 3. Respondent 1 concludes that “in 1986 the public and the momentum to change something did not exist”. Moreover, as already confirmed, no realistic solution to the problem of nuclear energy usage existed in 1986, as renewable technologies were not sufficiently developed and thus not trustable.

According to Kingdon (1984) the alignment of the streams is oftentimes furthered by a policy entrepreneur, a role which was taken by Angela Merkel after the Fukushima accident. All interviewees were asked for a person, an individual politician which stood out at the time after the disaster in Chernobyl, however, almost nobody could come up with a name. Respondent 1 argued that “nobody stood out in the way Merkel did after the Fukushima accident and the subsequent decision”.

Taking all answers and remarks about the nuclear accident in Chernobyl in 1986 into account, it becomes obvious that nuclear energy and its risks may have been perceived as a problem by a part of the population in Germany, maybe even by the majority (problem stream), there, most notably, was no solution, which could have been applicable in the case of an alignment of the streams (policy stream). Additionally, the societal sentiment was not sufficiently furthering change, showing that the ground for such radical change was not yet prepared. Thus, even if Chernobyl was a focusing event, the streams could not have been aligned due to this gap in the policy stream. Furthermore, no policy entrepreneur

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<sup>27</sup> *Tageszeitung*, „Vor der Entwarnung wird gewarnt“, 28.05.2017

<sup>28</sup> *Bild*, „Ist der Atomausstieg heute machbar?“, 27.03.2011

used the event to promote a certain policy outcome by furthering the alignment of the streams, confirming H2.

**Conclusion**

This bachelor thesis aimed at identifying the mechanisms that enabled the rather radical policy change in Germany after the Fukushima nuclear accident in 2011. Two hypotheses and three contextualized model elements were developed to predict policy change according to the multiple streams approach by John Kingdon (1984) after so called focusing events. They were tested by applying causal process tracing, using data collected during interviews, and from analyzed newspaper articles. All hypotheses were confirmed.

Therefore, it can be concluded that the MSA by Kingdon (1984) is able to well-explain the policy measures taken by the German government in response to the Fukushima nuclear accident, by arguing that due to the focusing event in Fukushima and with the help of Angela Merkel as a policy entrepreneur, the three steams intersected and created an opportunity for change, which was successfully used and thus resulted in the decision to permanently phase out nuclear energy in Germany in June 2011. Furthermore, the model is able to explain the low-key policy reaction of the German government after the nuclear accident in Chernobyl, as illustrated in figure 2.

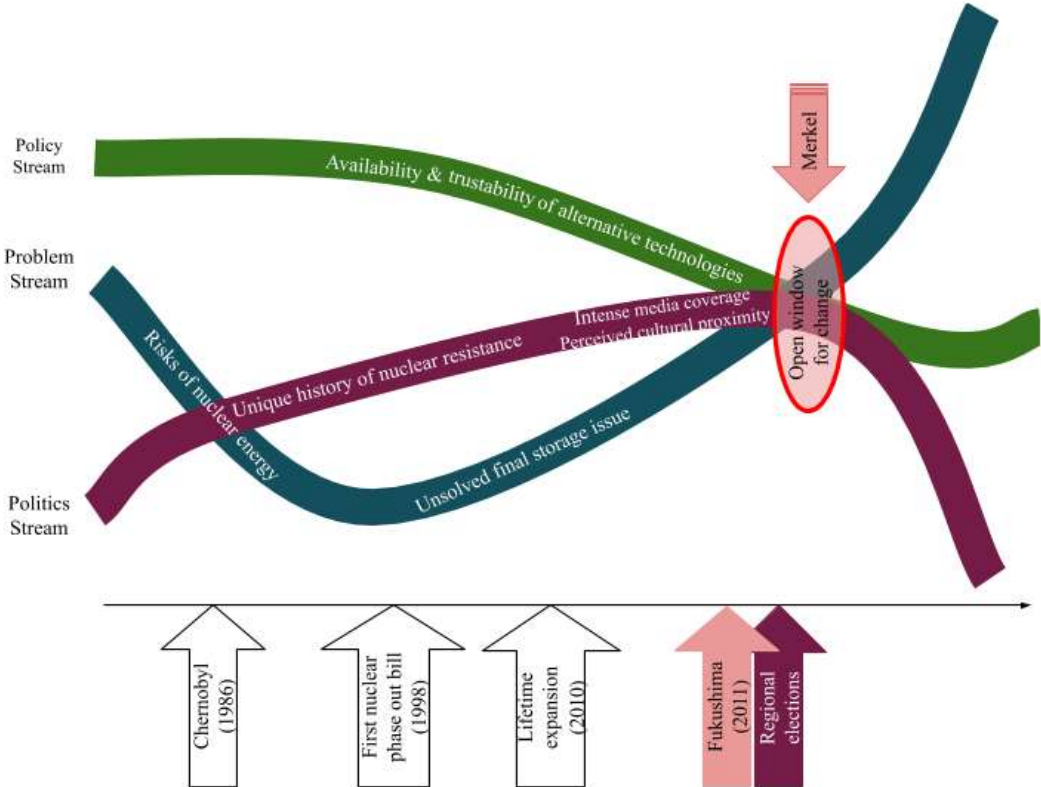


Figure 2: Germany and the nuclear energy issue according to the MSA by Kingdon (1984)

The evidence suggests that as Goebel et al. (2015) proposed, nuclear energy and the therewith connected risks are perceived as a problem within the wider German society. All interviewees agreed that the accident was seen as the proof for those risks and the uncontrollability of nuclear power plants in extraordinary situations. It was generally stated that even if earthquakes and similar natural events

are rather unrealistic in Germany, there remains a risk of floods or human-made catastrophes which may lead to a nuclear meltdown. This risk was identified as the contextualized problem stream element. The analysis also showed that the unsolved final storage is perceived as a problematic issue by large parts of the German society, thus it needs to be added to the problem stream. Furthermore, it was proven that a trustable alternative technology to replace nuclear energy, which is economically profitable, was available at the time of the disaster in Japan, thus offering a potential solution for the problem (policy stream), partly verifying Wittneben (2011).

Moreover, the analysis indicates that four distinct aspects related to the sentiment within the government and society provided the ground for the policy change, which reflect the additional causes for the Germany Sonderweg by Wittneben (2011). Generally, it can be said that there were massive pressures on the federal government after the calamity to revise its decision from October 2010. Firstly, it was confirmed that the upcoming regional elections in four Bundesländer increased those pressures and that the final decision taken in June 2011 to phase the nuclear capacity out was strongly motivated by electoral purposes, as it was obvious that holding on to nuclear energy would lead to massive vote losses for the CDU and FDP, which could be avoided by a political turnaround in this issue, as already argued by Meyer & Schoen (2017). Secondly, a connection between the German history and the attitude of the German society towards nuclear energy nowadays was identified: The antipathy against nuclear energy has its origin in the antipathy against war and nuclear weapons in particular, as the plutonium required for this could be fabricated in nuclear power plants. This movement thus started with the discussion about the rearmament of Germany. Ever since there has been a discussion about nuclear energy, which always was connected to massive protests. A third aspect was the perceived cultural proximity of the German society to Japan but not to the Soviet Union: The accident in Fukushima immensely changed the perceived fallibility of German nuclear power plants, after seeing that a high-tech nation like Japan was not able to control the disaster. The fourth aspect which influenced the public perception after the accident was the intense media coverage, which displayed the dimension of the accident in real-time. Furthermore, Angela Merkel was found to hold a key role in this process and can hence be identified as what Kingdon (1984) called a policy entrepreneur.

The mechanisms that contributed to the rather radical policy change as a variation from the status quo were therefore identified as, first, a socially perceived problem, second, a potential solution, third, a rather tense situation and pressures on the government as well as fourth, a policy entrepreneur who uses the momentum of the focusing event. Important to recognize is that not an individual mechanism but rather several coinciding ones produced this outcome.

In the case of the German response to the Chernobyl accident, some model elements found in 2011 were missing, which explains the low key response. The evidence suggests that a growing part of the society already perceived nuclear energy and its risks as a problem. However, there was no alternative technology available as well as there was no policy entrepreneur who was able to connect the three streams and further a desired policy outcome. Furthermore, it could have been the case that the

sentiment within government and society was different and that there was not enough pressure for change.

The focus of this bachelor thesis was the German policy reaction to the nuclear accidents in Chernobyl and Fukushima, however, it also aimed at explaining why no other European country followed the German example to this extent. It can be noted that nuclear energy and the connected risks are generally not perceived to be a big problem in other European countries. Still, if this would have been the case, the political and societal pressures might not have been strong enough, as the focus of the media coverage differed, and the topic is less historically charged. A lack of a policy entrepreneur is another potential reason for the inaction of other European countries. Therefore, no alignment of the streams could have been possible.

The MSA was chosen to be used, because the decision taken by the German government in June 2011 to phase out Germany's nuclear capacity was identified as rather irrational when taking the findings of Samuelson and Zeckhauser (1988) into account. However, the majority of interviewees disagreed with the description of the decision by the German government, arguing that, for different reasons, it was a very rational choice. Therefore, further research should be done, to test whether rational choice theories could be used to explain this variation, too. Additionally, within the time scope of this thesis, only nine interviews were conducted as well as they were only coded by the researcher. To increase the reliability of the findings, further interviews should be conducted, as well as their coding should be reviewed. Furthermore, the study could be extended internationally, to be better able to understand the reaction of other (European) governments.

Generally, the model is applicable to other similar situations and may be able to explain policy change which appears to be rather incongruous, as long as there is a socially perceived problem, a potential solution to this problem and a tense situation in which there are political and social conflicts and lots of attention given to this issue. When a situation like this is given, a focusing event with the support of a policy entrepreneur may lead to rather irrational political change. Hence, the model can be used to explain political behavior and change following focusing events.

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## Appendices

### Appendix A – Newspaper Articles analyzed

Category	Newspaper	Date	Author	Link	Title
1	BILD	14.03.2011	Not specified (n.s.)	<a href="https://www.bild.de/politik/2011/deutschlands-geschichte-der-atomkraftwerke-16800896.bild.html">https://www.bild.de/politik/2011/deutschlands-geschichte-der-atomkraftwerke-16800896.bild.html</a>	Das ist Deutschlands umstrittene AKW-Geschichte
1	Süddeutsche Zeitung	27.04.2011	Matthias Kolb	<a href="https://www.sueddeutsche.de/politik/25-jahre-super-gau-in-tschernobyl-1-die-schreckliche-faszination-der-katastrophe-1.1084740">https://www.sueddeutsche.de/politik/25-jahre-super-gau-in-tschernobyl-1-die-schreckliche-faszination-der-katastrophe-1.1084740</a>	Die Faszination der Katastrophe
1	Süddeutsche Zeitung	10.05.2011	Yasmin Vetterl	<a href="https://www.sueddeutsche.de/muenchen/erding/atomkraftgegner-auf-dem-schrankenplatz-erinnerungen-an-tschernobyl-1.1095618">https://www.sueddeutsche.de/muenchen/erding/atomkraftgegner-auf-dem-schrankenplatz-erinnerungen-an-tschernobyl-1.1095618</a>	Erinnerungen an Tschernobyl
1	tageszeitung	14.01.2016	n.s.	<a href="https://taz.de/30-Jahre-nach-den-Wackersdorf-Protessen/!5265313/">https://taz.de/30-Jahre-nach-den-Wackersdorf-Protessen/!5265313/</a>	Triumph der Atomgegner
1	tageszeitung	25.04.2016	Bernhard Pötter	<a href="https://taz.de/30-Jahre-Tschernobyl/!5298225/">https://taz.de/30-Jahre-Tschernobyl/!5298225/</a>	Eine Katastrophe verändert die Welt
1	tageszeitung	26.04.2016	n.s.	<a href="https://taz.de/Atomkritiker-ueber-AKW-Verlustgeschaefft/!5295132/">https://taz.de/Atomkritiker-ueber-AKW-Verlustgeschaefft/!5295132/</a>	„Ich habe Angst um die Konzerne“
1	tageszeitung	27.04.2016	Luisa Podsadny	<a href="https://taz.de/Tschernobyl-30-Jahre-danach/!5298477/">https://taz.de/Tschernobyl-30-Jahre-danach/!5298477/</a>	Getrenntes Erinnern
1	tageszeitung	28.05.2017	Mannfred Kriener	<a href="https://taz.de/Tschernobyl-in-der-taz/!5407129/">https://taz.de/Tschernobyl-in-der-taz/!5407129/</a>	Vor der Entwarnung wir gewarnt
1	Welt	11.07.2008	Robin Alexander	<a href="https://www.welt.de/politik/article2203802/Atomkraft-war-frueher-ein-Teil-linker-Utopien.html">https://www.welt.de/politik/article2203802/Atomkraft-war-frueher-ein-Teil-linker-Utopien.html</a>	Atomkraft war früher ein Teil linker Utopien
1	Welt	22.04.2016	Sabine Dobel	<a href="https://www.welt.de/regionales/bayern/article154639428/Bayerns-Pilze-und-Wildschweine-strahlen-immer-noch.html">https://www.welt.de/regionales/bayern/article154639428/Bayerns-Pilze-und-Wildschweine-strahlen-immer-noch.html</a>	Bayerns Pilze und Wildschweine strahlen immer noch
2	BILD	28.10.2010	n.s.	<a href="https://www.bild.de/politik/2010/beschlossene-sache-14460212.bild.html">https://www.bild.de/politik/2010/beschlossene-sache-14460212.bild.html</a>	Bundestag verlängert AKW-Laufzeiten
2	BILD	24.04.2011	Thomas Strobel	<a href="https://www.bild.de/news/standards/thomas-strobl/kommentar-17564410.bild.html">https://www.bild.de/news/standards/thomas-strobl/kommentar-17564410.bild.html</a>	CDU muss Atom-Fehler bekennen
2	Süddeutsche Zeitung	29.20.2010	Nico Fried	<a href="https://www.sueddeutsche.de/politik/atomgesetz-versprochen-ist-versprochen-1.1017349">https://www.sueddeutsche.de/politik/atomgesetz-versprochen-ist-versprochen-1.1017349</a>	Versprochen ist versprochen



2	tageszeitung	28.20.2010	Malte Kreuzfeld & Felix Dachsel	<a href="https://taz.de/Bundestag-beschliesst-laengere-Laufzeiten!/5133231/">https://taz.de/Bundestag-beschliesst-laengere-Laufzeiten!/5133231/</a>	Atomausstieg unter Protest gekippt
2	tageszeitung	29.20.2010	Nick Reimer	<a href="https://taz.de!/5133184/">https://taz.de!/5133184/</a>	Da geht noch was
2	Welt	06.09.2010	n.s.	<a href="https://www.welt.de/politik/deutschland/article9426310/Regierung-spaltet-mit-Atompolitik-die-Gesellschaft.html">https://www.welt.de/politik/deutschland/article9426310/Regierung-spaltet-mit-Atompolitik-die-Gesellschaft.html</a>	„Regierung spaltet mit Atompolitik die Gesellschaft“
2	Welt	23.09.2010	Norbert Lossau	<a href="https://www.welt.de/wissenschaft/article9828351/Wie-sinnvoll-ist-die-Laufzeitverlaengerung.html">https://www.welt.de/wissenschaft/article9828351/Wie-sinnvoll-ist-die-Laufzeitverlaengerung.html</a>	Wie sinnvoll ist die Laufzeitverlängerung?
2	Welt	03.02.2011	n.s.	<a href="https://www.welt.de/politik/deutschland/article12433822/Greenpeace-klagt-gegen-AKW-Laufzeitverlaengerung.html">https://www.welt.de/politik/deutschland/article12433822/Greenpeace-klagt-gegen-AKW-Laufzeitverlaengerung.html</a>	Greenpeace klagt gegen Laufzeitverlängerung
3	BILD	04.04.2011	n.s.	<a href="https://www.bild.de/politik/inland/atomausstieg/ethik-kommission-beraet-neues-atomgesetz-17250858.bild.html">https://www.bild.de/politik/inland/atomausstieg/ethik-kommission-beraet-neues-atomgesetz-17250858.bild.html</a>	Merkel und der Rat der Atom-Weisen
3	BILD	16.04.2011	n.s.	<a href="https://www.bild.de/regional/frankfurt/antiatomproteste-spiegeln-schuldgefuehle-17459216.bild.html">https://www.bild.de/regional/frankfurt/antiatomproteste-spiegeln-schuldgefuehle-17459216.bild.html</a>	„Anti-Atomproteste spiegeln Schuldgefühle wider“
3	Süddeutsche Zeitung	12.02.2011	n.s.	<a href="https://www.sueddeutsche.de/politik/kuenast-zu-atomdebatte-gruene-fordern-merkel-zu-atom-umkehr-auf-1.1071118">https://www.sueddeutsche.de/politik/kuenast-zu-atomdebatte-gruene-fordern-merkel-zu-atom-umkehr-auf-1.1071118</a>	Merkel beruft Krisengipfel ein
3	Süddeutsche Zeitung	14.03.2011	Michael Bauchmüller	<a href="https://www.sueddeutsche.de/politik/atomkatastrophe-in-japan-der-gau-im-wohnzimmer-1.1071981-0#seite-2">https://www.sueddeutsche.de/politik/atomkatastrophe-in-japan-der-gau-im-wohnzimmer-1.1071981-0#seite-2</a>	Der GAU erreicht das Wohnzimmer
3	Süddeutsche Zeitung	19.03.2011	Kurt Kister	<a href="https://www.sueddeutsche.de/politik/die-bundesrepublik-und-die-kernenergie-atomarer-glaubenskrieg-1.1074287">https://www.sueddeutsche.de/politik/die-bundesrepublik-und-die-kernenergie-atomarer-glaubenskrieg-1.1074287</a>	Atomarer Glaubenskrieg
3	tageszeitung	11.03.2012	Andreas Wyputta	<a href="https://taz.de!/5098668/">https://taz.de!/5098668/</a>	Atomkraft, gib auf, du bist umstellt!
3	tageszeitung	11.03.2012	S. Döring & F. Feger	<a href="https://taz.de/Ein-Jahr-nach-dem-Fukushima-Gau!/5098699/">https://taz.de/Ein-Jahr-nach-dem-Fukushima-Gau!/5098699/</a>	Die deutsche Atomangst
3	Welt	13.03.2011	Claudia Ehrenstein	<a href="https://www.welt.de/politik/deutschland/article12805879/Deutsche-diskutieren-nach-GAU-in-Japan-Atomausstieg.html">https://www.welt.de/politik/deutschland/article12805879/Deutsche-diskutieren-nach-GAU-in-Japan-Atomausstieg.html</a>	Deutsche diskutieren nach GAU in Japan Atomausstieg
3	Welt	14.03.2011	n.s.	<a href="https://www.welt.de/vermischtes/weltgeschehen/article12821324/Zehntausende-fordern-Atom-Ausstieg-in-Deutschland.html">https://www.welt.de/vermischtes/weltgeschehen/article12821324/Zehntausende-fordern-Atom-Ausstieg-in-Deutschland.html</a>	Zehntausende fordern Atom-Ausstieg in Deutschland
4	BILD	11.03.2011	Micheal Backhaus & Walter Mayer	<a href="https://www.bild.de/geld/wirtschaft/atomausstieg/wie-kommt-uns-mr-siemens-teil-1-23088648.bild.html">https://www.bild.de/geld/wirtschaft/atomausstieg/wie-kommt-uns-mr-siemens-teil-1-23088648.bild.html</a>	Wie teuer kommt uns der Atomausstieg?
4	BILD	27.03.2011	Michael Backhaus & Martin Lambeck	<a href="https://www.bild.de/politik/inland/klaus-toepfer/ist-der-atom-ausstieg-machbar-17104978.bild.html">https://www.bild.de/politik/inland/klaus-toepfer/ist-der-atom-ausstieg-machbar-17104978.bild.html</a>	Ist der Atom-Ausstieg heute machbar?

4	BILD	30.06.2011	n.s.	<a href="https://www.bild.de/politik/inland/atomausstieg/bundestag-beschliesst-atom-ausstieg-bis-2022-18606450.bild.html">https://www.bild.de/politik/inland/atomausstieg/bundestag-beschliesst-atom-ausstieg-bis-2022-18606450.bild.html</a>	Deutschland schafft Atomkraft ab!
4	Süddeutsche Zeitung	08.06.2011	Markus Balsler	<a href="https://www.sueddeutsche.de/wirtschaft/ausstieg-aus-der-kernenergie-kurzschluss-bei-der-atomlobby-1.1106240">https://www.sueddeutsche.de/wirtschaft/ausstieg-aus-der-kernenergie-kurzschluss-bei-der-atomlobby-1.1106240</a>	Kurzschluss bei der Atomlobby
4	Süddeutsche Zeitung	30.06.2011	n.s.	<a href="https://www.sueddeutsche.de/politik/bundestag-will-atomausstieg-beschliessen-dieser-ausstieg-ist-unser-ausstieg-1.1114258">https://www.sueddeutsche.de/politik/bundestag-will-atomausstieg-beschliessen-dieser-ausstieg-ist-unser-ausstieg-1.1114258</a>	„Dieser Ausstieg ist unser Ausstieg“
4	tageszeitung	16.03.2011	Matthias Lohre	<a href="https://taz.de/Juergen-Trittin-ueber-das-AKW-Moratorium/!5124689/">https://taz.de/Juergen-Trittin-ueber-das-AKW-Moratorium/!5124689/</a>	„Schwarz-gelb hat Angst vor Wählern“
4	tageszeitung	30.06.2011	Ulrich Schulte	<a href="https://taz.de/!5117431/">https://taz.de/!5117431/</a>	Das nationale Gemeinschaftswerk
4	tageszeitung	30.06.2011	n.s.	<a href="https://taz.de/!5117492/">https://taz.de/!5117492/</a>	Wir sind ausgestiegen!
4	Welt	14.03.2011	n.s.	<a href="https://www.welt.de/politik/deutschland/article12809679/Opposition-will-aeltere-Atommeiler-sofort-abschalten.html">https://www.welt.de/politik/deutschland/article12809679/Opposition-will-aeltere-Atommeiler-sofort-abschalten.html</a>	Opposition will ältere Atommeiler sofort abschalten
4	Welt	15.03.2011	Ulli Kulke	<a href="https://www.welt.de/debatte/kommentare/article12832612/Ausstiegstheater-auf-dem-Ruecken-der-Erdbebenopfer.html">https://www.welt.de/debatte/kommentare/article12832612/Ausstiegstheater-auf-dem-Ruecken-der-Erdbebenopfer.html</a>	Ausstiegstheater auf dem Rücken der Erdbebenopfer
4	Welt	17.03.2011	Ralf Fücks	<a href="https://www.welt.de/debatte/kommentare/article12864531/Es-gibt-keine-Argumente-mehr-fuer-die-Atomkraft.html">https://www.welt.de/debatte/kommentare/article12864531/Es-gibt-keine-Argumente-mehr-fuer-die-Atomkraft.html</a>	Es gibt keine Argumente mehr für die Atomkraft
4	Welt	05.05.2011	Roland Kupers	<a href="https://www.welt.de/debatte/kommentare/article13347004/Das-Ende-der-Atomkraft-ist-nicht-mehr-aufzuhalten.html">https://www.welt.de/debatte/kommentare/article13347004/Das-Ende-der-Atomkraft-ist-nicht-mehr-aufzuhalten.html</a>	Das Ende der Atomkraft ist nicht mehr aufzuhalten

## *Appendix B – Interview Questions*

1. Ich möchte jetzt zum Anfang nochmal ganz kurz das Ziel meines Projekts beleuchten. Deutschland hat ja als einziges Land in Europa als Reaktion auf den Atomunfall in Fukushima 2011 den Atomausstieg beschlossen, was aus verschiedenen Gründen eher überraschend kam. Das Ziel meiner Arbeit ist daher einen Erklärungsansatz für die Entscheidung der Bundesregierung für den Atomausstieg 2011 zu liefern. In dem folgenden Interview geht es also nicht darum was richtig oder falsch ist, es geht mir schlicht um ihre persönliche Erfahrung und Einschätzung.
2. Atomarer Unfall im japanischen Atomkraftwerk Fukushima Daiichi (2011)
  - a. Nach dem Unglück in dem Atomkraftwerk 2011 gab es in Deutschland vermehrt Vorbehalte in der Bevölkerung gegen die Nutzung von Atomkraft. Auffällig ist das vor allem im Vergleich zu anderen europäischen Staaten wie Großbritannien und der Schweiz, in denen der Unfall weniger Einfluss auf die Meinung der Bevölkerung hatte.
    - i. Woran könnte das Ihrer Meinung nach liegen?**
    - ii. Welchen Einfluss hatte, ihrer Meinung nach, die Medienberichterstattung?**
    - iii. Welchen Einfluss hatten, ihrer Meinung nach, Lobbygruppen wie NGOs oder Energiekonzerne?**
    - iv. Denken Sie, dass die deutsche Geschichte einen Einfluss auf die Reaktion innerhalb der Bevölkerung hatte?**
    - v. Welchen Einfluss hatte, ihrer Meinung nach, die ungelöste Endlagerfrage?**
  - b. Nur ein halbes Jahr vor dem Unglück in Fukushima, also im Oktober 2010, hatte die Bundesregierung den 2000 beschlossenen Atomausstieg gestoppt. Besonders vor diesem Hintergrund kam die Entscheidung im darauffolgenden Sommer unerwartet.
    - i. Wie ist, ihrer Meinung nach, der politische Druck entstanden, der dazu geführt hat, dass dieselbe Regierung im Sommer 2011 den Atomausstieg beschlossen hat?**
    - ii. Welchen Einfluss hatten, ihrer Meinung nach, Lobbygruppen wie NGOs oder Energiekonzerne?**
    - iii. Welchen Einfluss hatten, ihrer Meinung nach, einzelne bestimmte Politiker?**
    - iv. Glauben Sie, dass die anstehenden Landtagswahlen in 4 Bundesländern Einfluss auf die politische Diskussion im Bundestag hatten?**
    - v. Wurde, ihrer Einschätzung zufolge, in diesen Diskussionen der Unfall in Fukushima als Beweis für die Risiken der Atomkraft bewertet?**
  - c. Vom heutigen Standpunkt aus erscheint die Entscheidung der Bundesregierung für den Atomausstieg zu genau diesem Zeitpunkt wenig rational, besonders durch das geringe Risiko von Erdbeben und Tsunami in der hiesigen Region, den Stopp des vorhergegangenen Atomausstieg.
    - i. Haben Sie das damals anders wahrgenommen oder nicht, und warum?**
3. Atomarer Unfall im Atomkraftwerk bei Tschernobyl (1986):
  - a. Im Grunde genommen wurden die Gefahren und Risiken für die deutsche und europäische Bevölkerung zunächst runtergespielt, obwohl Deutschland vom Fallout

direkt betroffen war. Hinzukommt, dass sowohl die SPD als auch die Grünen sich bereits nach diesem Unfall für einen Atomausstieg ausgesprochen haben – ohne Erfolg.

- i. Warum hat es, ihrer Meinung nach, in diesem Zusammenhang keine größere gesellschaftliche Bewegung gegen Regierung und die Nutzung von Atomkraft in Deutschland gegeben?**
      - ii. Welche Rolle hat, ihrer Meinung nach, die Medienberichterstattung damals gespielt?**
      - iii. Welche Rolle haben, ihrer Meinung nach, Lobbygruppen damals gespielt?**
      - iv. Welche Rolle hatten, ihrer Meinung nach, einzelne bestimmte Politiker?**
4. Nachdem wir nun die beiden Atomunfälle getrennt betrachtet haben, würde ich gerne genauer darauf eingehen, warum die Bundesregierung genau zu diesem Zeitpunkt eine solche Entscheidung getroffen hat.
  - a. Warum unterscheiden sich die politischen Reaktionen auf die beiden Unglücke ihrer Meinung nach so drastisch?**
    - i. Was hat sich Ihrer Meinung nach in der Zeit zwischen Tschernobyl und Fukushima verändert?**
    - ii. Was war so besonders/anders bei Fukushima?**

*English Translation (not used during interviews)*

1. In the beginning of this interview I quickly want to address the aim of this project again. Germany is the only country in Europe which decided to phase out its nuclear capacity in response to the nuclear accident in Fukushima in 2011, which for different reasons came rather surprisingly. The aim of this study thus is to develop an explanation for this decision of the German government in June 2011. In the following interview no right or wrong answers exist, it is solely about your personal experiences and assessments.
2. Nuclear accident in the Japanese nuclear power plant Fukushima Daiichi (2011)
  - a. After the accident the doubts within the German population against the usage of nuclear energy increased. This is especially interesting and outstanding in the European comparison: the perceptions of the British as well as of the Swiss population were much less influenced by the accident.
    - i. What do you think, could be a reason for that?**
    - ii. What influence did media coverage play in this context, in your opinion?**
    - iii. What influence did lobby groups such as NGOs and the energy industry have in this context, in your opinion?**
    - iv. Do you think that the German history/past had an influence on the reaction within society?**
    - v. What role, according to you, did the unsolved final storage issue play in this context?**
  - b. In October 2010, thus only half a year before the accident in Fukushima, the German government stopped the nuclear phase out agreed upon by the government in 2000 and extended the life spans of the remaining reactors. Taking this into account, the decision in summer 2011 came as a surprise.
    - i. How did the political pressures which led to a political turnaround of the same German government in less than year develop, according to you?**
    - ii. What influence did lobby groups such as NGOs as well as the energy industry have, in your opinion?**
    - iii. What influence did individual politicians (which?) have in this situation, in your opinion?**

- iv. **Do you think that the upcoming regional elections in four Bundesländer had an influence on the political discussion?**
      - v. **Was, according to you, the accident in Fukushima seen as a proof of the risks of nuclear energy?**
    - c. From today's standpoint one could say that the decision of the German government to phase out its nuclear capacity at this specific point in time was rather irrational, especially when taking into account the low risks of earthquakes and tsunamis in Germany and the decision to stop the first nuclear phase out in 2010.
      - i. **Did you experience it like this, too, or differently and why?**
  - 3. Nuclear accident in the Soviet nuclear power plant Chernobyl (1986)
    - a. Basically, the risks and dangers of the nuclear accident in Chernobyl for the German and European society were downplayed by the government, even if Germany was directly influenced by the nuclear fallout. Furthermore, the SPD and obviously the Greens did demand a nuclear phase out straight after the accident – without success.
      - i. **Why was there no bigger societal movement against the government and the usage of nuclear energy in this context, according to you?**
      - ii. **What role did media coverage play at that time, in your opinion?**
      - iii. **What influence did lobby groups, such as NGOs and the energy industry play, at that time, according to you?**
      - iv. **What role did individual politicians (which?) play in your opinion?**
  - 4. After having looked at the two accidents separately, I would like to address the fact that the decision to phase out the nuclear energy in Germany at this specific moment in time.
    - a. **Why do the political reactions to the two accidents differ this drastically?**
      - i. **What did, in your opinion, change in the time between the two accidents?**
      - ii. **What was so special about Fukushima?**

*Appendix C – Codebook*

**Fukushima\_Society:** When a participant/article describes the mood within society in the context of the Fukushima nuclear accident

<b>Code</b>	<b>When to use</b>
Fukushima_Society (German history)	When a participant/article mentions a historical reference
Fukushima_Society (protests)	When a participant/article mentions anti-nuclear protests
Fukushima_Society (Unsolved final storage issue)	When a participant/article mentions the unsolved final storage issue
Fukushima_Society (media coverage)	When a participant/article mentions the media coverage in Germany after the Fukushima accident
Fukushima_Society (lobby groups)	When a participant/article mentions the influence of lobby groups on the political discussion within society after the Fukushima accident
Fukushima_Society (cultural proximity)	When a participant/article mentions the perceived cultural proximity to Japan

**Fukushima\_Politics:** When a participant/article describes the mood within the German government in the context of the Fukushima nuclear accident

<b>Code</b>	<b>When to use</b>
Fukushima_Politics (pressure)	When a participant/article mentions pressures on the German government in the context of nuclear energy
Fukushima_Politics (lobby groups)	When a participant/article mentions the influence of lobby groups on the political discussion within the Bundestag after the Fukushima accident
Fukushima_Politics (upcoming elections)	When a participant/article mentions the upcoming election in four Bundesländern
Fukushima_Politics (individual politician: Merkel)	When a participant/article mentions Angela Merkel as an individual politician that was a key figure in the political decision making process after the accident in Fukushima in 2011
Fukushima_Politics (individual politician: other)	When a participant/article mentions somebody else than Angela Merkel or Norbert Roettgen as an individual politician that was a key figure in the political decision making process after the accident in Fukushima in 2011
Fukushima_Politics (risk proof)	When a participant/article mentions that the Fukushima accident was seen as a general proof of the risks of nuclear energy

**Chernobyl:** When a participant/article describes the German reaction to the Chernobyl accident in 1986

Chernobyl (government reactions)	When a participant/article describes the reaction of the German government to the Chernobyl accident in 1986
Chernobyl (societal reaction)	When a participant/article describes the reaction of the German population to the Chernobyl accident in 1986
Chernobyl (media coverage)	When a participant/article describes the media coverage after the Chernobyl accident in 1986
Chernobyl (lobby groups)	When a participant/article describes the role of lobby groups (both sides) after the Chernobyl accident in 1986
Chernobyl (individual politician)	When a participant/article mentions individual politicians as key figures in the political process after the Chernobyl accident in 1986

**Differences:** When a participant/article mentions potential differences between the two nuclear accidents and the response in Germany

Differences (mentality)	When a participant/article mentions differing mentalities in 1986 and 2011
Differences (priority)	When a participant/article mentions differing priorities in 1986 and 2011
Differences (technology)	When a participant/article mentions the technological advance in particular in the renewable technologies/new technological possibilities in 2011

*Appendix D – Statutory declaration*

I hereby declare that I have authored this thesis independently, that I have not used other than the declared sources, and that I have explicitly marked all material which has been quoted either literally or by content from the used sources.

July 1, 2020

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A handwritten signature in blue ink, appearing to read "G. Decker", is written over a horizontal line.

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