Master thesis

The Green Energy Dilemma

A qualitative content analysis of the greening of nuclear energy in the European Parliament

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Abstract

This thesis studies whether the perception of nuclear energy has become greener in the European Parliament after the Fukushima accident in 2011, and who in the European Parliament argues that nuclear energy is green. The literature suggests that there is a crossroad between climate, energy, and energy politics in the European Parliament. This thesis draws on framing theory and European Parliament cleavage theory. It is based on a qualitative content analysis of debates in the European Parliament between 2011-2022. This thesis finds that the perception of nuclear energy has become greener in the European parliament. It also finds that the political right is more likely to argue that nuclear energy is green than the political left. The thesis thus finds that there is a crossing between climate, energy and climate policy in the area of nuclear energy in the European Parliament. It also suggests that the political left and right have different understandings of the meaning of "green energy".

Acknowledgements

Abbreviations

EU – European Union

EP – European Parliament

SEA – Single European Act

MEP – Member of the European Parliament

S&D – Group of the Progressive Alliance of Socials and Democrats in the European Parliament

EPP – Group of the European People's Party

GUE/NGL – Confederal Group of the European United Left/Nordic Green Left

EFDD – Europe of Freedom and Direct Democracy

EFD – Europe of Freedom and Democracy

ALDE – The Alliance of Liberals and Democrats for Europe

Renew – Renew Europe

ID – Identity and Democracy

Verts/ALE – The Greens/European Free Alliance

NI – Non-affiliated

UKIP – United Kingdom Independence Party

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1.0 Introduction

After Russia's invasion of Ukraine, energy security has taken a central position on the European Union's (EU) agenda (Giuli & Oberthür, 2023).

Nuclear energy is by many considered the most controversial source of energy of our time (Krüger, 2016, p. 162). The debate of whether nuclear power should be utilized as an energy source has been ongoing within EU member states for several decades. In 2011, there was a major nuclear accident in Fukushima in Japan, which led several EU member states to review their stance on nuclear energy (Bernardi et al., 2018). Despite the dark outlook for nuclear energy in the EU after the Fukushima accident, the European Commission decided in 2022 to include certain nuclear energy projects in the taxonomy, through the Complimentary Climate Delegated Act. This means that investments in these projects are considered "green investments". The proposal of adding nuclear energy to the taxonomy was highly controversial. The EP challenged the Delegated act; thus, it came to a vote in the EP. The EP voted in favour of the Complimentary Climate Delegated act, and it came into force on the 1st of January 2023 (European Commission, 2022c).

The inclusion of nuclear energy in the taxonomy was made at a crucial point in time for energy security in the EU. Russia has for long been an important energy supplier for many European countries. Russia is by many considered an unreliable energy supplier (Casier, 2011), and the EU has for long sought for alternative energy sources (Krüger, 2016, p. 221). Following Russia's invasion of Ukraine in February 2022, the EU boycotted the use of Russian energy, and later introduced the REPowerEU scheme, which seeks to make the EU independent from Russian fossil fuels before 2030 (European Commission, 2022b).

The fact that nuclear energy was labelled green in the taxonomy only 11 years after the Fukushima accident is a puzzling development. It is therefore interesting to look at how the framing of nuclear energy has changed since the Fukushima accident.

The climate and environmental policy of the European Union (EU) has spilled over into many areas; the energy policy is no exception. The European Parliament (EP) is by many considered an "environmental champion", because of their ambitious climate targets (Burns, 2019b). sThis thesis seeks to understand how the debate on nuclear energy has evolved since the

Fukushima accident, where powerplant security was high up on the agenda, to nuclear energy becoming green in the taxonomy.

The research question is as follows:

How has the framing of nuclear energy evolved in the European Parliament since the Fukushima accident, and who is framing nuclear energy as green?

The goal of this thesis is not to evaluate whether nuclear energy is a desired source of energy in the EU. The goal is rather to understand the evolution of how nuclear energy could become "green" in the taxonomy eleven years after the Fukushima incident, after which nuclear energy arguably was at its most contentious. Furthermore, it is interesting to understand who in the EP is arguing that nuclear energy is green. This thesis is seeking to contribute to the existing literature on the crossroad between climate, environmental and energy policy. It will use framing theory presented by Rein & Schön (1977), elaborated by van Hulst & Yanow (2016), as well as EP cleavage theory. As for the methodology, thesis will perform a qualitative content analysis of debates in the EP between 2011 and 2022 – between the Fukushima accident and the inclusion of nuclear energy to the EU taxonomy.

This thesis consists of six chapters. The second chapter provide the necessary background to understand the research question, and place the thesis in the existing literature. The third chapter will concern the theoretical framework that will guide the analysis; framing theory and EP cleavage theory. The fourth chapter will cover the methodology used for the analysis, as well as the study's validity and reliability. The fifth chapter will cover the analysis; findings and discussion of these. The sixth and final chapter will conclude the thesis and suggest related areas for further research.

2.0 Context

This chapter will cover the context necessary to understand the research question. It will first cover the crossroad between climate/environmental and energy policy. After this, it is suitable to introduce the EP as a green champion, as the analysis will draw on debates on nuclear energy in the EP. The chapter will then tie the climate and environment policy covered in the first part of the chapter to the nuclear energy policy in the EU. This creates a foundation to cover the EU taxonomy for sustainable financial activities, to which nuclear energy was recently added. As the chapter shows, this was a controversial decision amongst several member states. This state application and ambition, in order to gain an overview of how nuclear energy is generally received   in   the   EU. As well as giving an introduction to the topic, the chapter will also place my study in the existing literature, and create a foundation of the frames used in the analysis.

2.1. A combination of climate, environmental and energy policy

In order to understand how the intertwining of climate, environmental and energy policy has evolved in the EU, it is necessary to introduce the history of the intertwining of these policy areas.

The EU pursues three goals in the field of energy policy, also called "the energy trinity" (Solorio Sandoval & Morata, 2012, p. 2);

1) Promoting sustainability and address climate change
2) Affordability and competitiveness of suppliers
3) Securing energy supply

These three pillars are supposed to be of equal importance; however, this is not always the case (Strambo et al., 2015). Which pillar gets the most focus in the EU has varied over time. In the 1970's, the focus was largely on energy security due to the oil crisis, while the common market and climate concerns gained focus in respectively the 1990s and early 2000s (Nilsson & Nilsson, 2005; Strambo et al., 2015). However, the greening of the energy policy in the EU started earlier than this. In the 1970's the EU energy policy started to show signs of greenification. By the 1980s, the green energy policy in the EU was institutionalized with the Single European Act (SEA). This allowed for climate and environmental policy to influence decisions in strategic areas, such as energy (Schubert et al., 2016, p. 105). Since the 1990s, the

line between climate, environmental and energy policy has steadily become more blurred (Skjærseth, 2021).

The intertwining of climate, environmental and energy policy can be attributed to the increased climate ambitions in the EU (Skjærseth, 2021). After the Kyoto Protocol in 1997, the EU committed to an 8% reduction in greenhouse gas emissions between 2008 and 2012. Over the next decades, the commitment of emission reduction increased to 20% by 2020, then 40% by 2030. The 2030 target was in 2020 increased to 55%, through the Fit for 55-package.

Energy policy in the EU has always been a contentious topic, because every state has different methods of reaching energy security(Schubert et al., 2016, pp. 1–2). It is still necessary to highlight that there is still a common environmental standard in the EU that the member states have committed to (Hix & Høyland, 2022). These environmental standards are often based on the standards of the already environmentally advanced member states, such as the Nordics and the Netherlands. This has caused complications in policy making within sustainable energy. Most of the ten central- and eastern member states joining during the enlargements between 2004 and 2007 favour energy security over climate in energy policy making. On the other hand, the other existing member states are more concerned about climate change (Skjærseth, 2021).

Because of the ambitious emission reduction targets, it became increasingly important for the EU to involve sustainable practices in other policy areas, energy policy being no exception. This meant promoting sustainable energy sources. This includes traditional renewable energy sources, such as water, wind and sun. However, these energy sources can be unreliable, as they are dependent on external conditions such as the weather (Schubert et al., 2016, p. 2).

In the sense of integration in the field of economic policy, and important aspect is the "Do no significant harm"-principle. The essence of this principle is that no economic activity should cause a significant negative impact on the environmental objectives of the EU (European Commission, 2023).

Despite the increased focus on climate and environment in the EU, energy security has again gained a large spot on the EU agenda following Russia's invasion of Ukraine in February 2022 (Giuli & Oberthür, 2023). Russia has for long been considered an unreliable energy supplier that may use energy supplies as a means to reach its own political goals (Casier, 2011), and the EU saw the opportunity of starting the phase-out of Russian energy after the invasion of Ukraine through the REPowerEU scheme (Giuli & Oberthür, 2023). This causes another issue for the EU about reaching the energy demands of Europe. In previous crises, the aspect of

energy security has trumped the green aspect of energy, however, Giuli & Oberthür (2023) argue that for the 2022 energy crisis, the green aspect has a larger position than in the previous crises.

2.2 The European Parliament – A Green Champion?

The suggestion that green aspects of energy policy may have to yield in favour of energy security moves us over to the EP as a green champion. As this thesis is on the crossing between climate, environmental and energy policy in the EP, an introduction to the green politics in the EP is fruitful.

The EP has been dubbed a "green champion", because of their ambition in the field of climate- and environmental policy (Burns, 2019b). The EP gained more power through the SEA (Schubert et al., 2016, p. 105), and the environmental committee of the EP saw the SEA as an opportunity to increase its own and the EP's influence in the field of environment (Burns, 2019b). However, the environmental ambition of the EP seems to have declined over time (Burns & Carter, 2010). Burns and Carter (2010) suggest that a reason for this is enlargement of Central and Eastern member states in the early 2000's, who are more concerned with energy security than questions on climate and environment. Another possibility is that the election of right-wing politicians to the EP, a group with generally low ambition in the areas of climate and environment. Burns (2019b) argues that despite this development, the EP still holds a significant position of developing environmental policy.

On the topic of the EP's influence on environmental policy, Morata & Solorio Sandoval (2013) argue that the term "green" in terms of EU energy policy has shifted meaning from "sustainable" to "climate". Sustainability, in this term, refers to the environmental impact, while climate refers to greenhouse gas emissions. According to Morata and Solorio Sandoval (2013), this shift opens for the opportunity for the use of controversial energy sources with low emission of greenhouse gases, but may still constitute a hazard to the environment, such as nuclear energy. This makes it difficult to pinpoint exactly what one talk about when we are talking about "green". This sets the premise for the discussion of nuclear energy, and the discussion about whether nuclear energy is green or not.

2.3 EU nuclear energy policy

As mentioned in the introduction, nuclear energy is arguably the most controversial energy source of our time. This also means that each member state decides for themselves whether they utilize nuclear energy or not. The topic of nuclear energy in the EU has been contentious since the beginning of the European communities.

The backbone of the EU nuclear policy is the European Atomic Energy Community (EURATOM) Treaty, signed in 1957 and entered into force in 1958. Established as one of the original European communities in the aftermath of World War II, the objective of Euratom is to promote integration among the member states, and provide its member states with cheap energy. Some important "promote nuclear research, facilitate investment, ensure the supply of ores and nuclear fuels, and create a nuclear common market" (Södersten, 2022, p. 789). This treaty is by many deemed a limited success (Fouquet, 2019; Van Hecke, 2007). Although it addresses several important aspects of nuclear energy operation, it does not address powerplant safety or nuclear waste management, which is the responsibility of each member state's authorities (Fouquet, 2019). As each member state is responsible for its energy mix, it is also up to each member state to decide whether or not they include nuclear energy in their energy mix (Krüger, 2016).

Nuclear energy is heavily debated within the EU, as some potential issues of nuclear energy exceeds national borders. There are several reasons as to why nuclear energy might be discussed in the EU rather than being fully left to the member states (Krüger, 2016). Firstly, because of the small area of many EU member states, neighbouring countries may be affected by radiation. Secondly, the transportation of radioactive materials may constitute a hazard across borders. Thirdly, energy grids are already connected in Europe, which means that member states that do not necessarily use nuclear energy as part of their energy mix may still have nuclear energy from neighbouring countries on their soil (Krüger, 2016, p. 163). This suggests that nuclear energy is an issue that moves beyond the nation-states and that it is reasonable that nuclear energy is on the supranational agenda. However, nuclear energy has had a limited space on the EU agenda over the years. In the beginning of the European Communities, nuclear energy was on the agenda as a part of the establishment of EURATOM, however, due to the disagreement on the role of nuclear energy between France and the other member states, the issue was rarely on the agenda (Schubert et al., 2016).

An important changing point for the EU nuclear energy policy, which also brought nuclear energy back on the agenda, was the accident at the Fukushima Daiichi in Japan on the 11th of March 2011. A major earthquake triggered a tsunami, which disabled the powerplant's ability to cool down the reactors. As a result, hydrogen explosions, core meltdowns, as well as the release of radioactive materials raised the question of powerplant safety all over the world (Saraç-Lesavre & Laurent, 2019).

Several EU member states reconsidered their application of nuclear energy after the disaster in Fukushima (Bernardi et al., 2018), and the European Council called for the introduction of stress tests of the powerplants in the EU (European Parliament, 2016). This will be further elaborated on in the section on member state application and ambition.

2.4 The EU taxonomy and the Complimentary Climate Delegated Act

In order to understand the controversy of nuclear energy as green, it is necessary to give a short introduction to the EU taxonomy and the Complimentary Climate Delegated Act, which allowed for investments in nuclear energy to be labelled "green" investments. The EU taxonomy for sustainable activities is a list of environmentally sustainable economic activities (European Commission, n.d.). It was implemented to clarify the definition of "sustainability", and to make it easier for investors to identify which economic activities are sustainable (Schütze & Stede, 2021).

On the 6th of July 2022, the EP voted in favour of the Complimentary Climate Delegated Act proposed by the European Commission in February 2022. This act effectively allowed certain investments in the gas and nuclear energy fields to be labelled as "green" in the taxonomy (European Commission, n.d.). The reason behind the inclusion of nuclear energy in the taxonomy was to accelerate the transition to renewable energy sources (European Commission, 2022a).

The proposal was contentious among EU member states. Ministers from Denmark, Spain, Luxembourg, Portugal and Austria sent a joint letter to the European Commission criticizing the proposal of including nuclear energy in the taxonomy (Schulze et al., 2021). Austria and Luxembourg have announced that they will take the Commission to the European Court of Justice, for allowing gas and nuclear energy to be labelled as green (Euronews, 2022). This suggests that there is varying perspectives between the member states about whether nuclear energy is green or not.

Despite several countries disagreeing with the implementation of the Complimentary Climate Delegated Act, the fact that EU took the final step to classify certain nuclear energy investments as signals a policy shift at an EU level.

2.5 Member State Application and Ambition

Now that we have covered the EU aspect of the crossover between climate, environmental and energy policy, it is suitable to move over to the member state application and ambition. As the EP is directly elected, it is reasonable to cover the EU member states' application and ambition in the field of nuclear energy. This helps us set a precedent for how the situation for nuclear energy looks today. It will also provide a n introduction to possible topics, or frames, of arguments in debates in the EP.

A reason why nuclear energy policy has always been a difficult area of European integration is that the member states have different ambitions and capabilities. In 2021, 13 EU member states utilized nuclear powerplants (Eurostat, 2022). France has since the beginning of the EURATOM treaty been a driver for a common nuclear energy policy in Europe(Fouquet, 2019), and a large share of its energy mix consists of nuclear power. Sweden is also a country that relies heavily on nuclear energy (Hix & Høyland, 2022, p. 226). However, there are several countries possessing schemes to phase out nuclear energy, such as Belgium and Spain (Van Hecke, 2007), while Poland is seeking to open their first powerplant in the near future (Aszódi et al., 2021). Meanwhile, countries such as Austria and Italy are generally against nuclear energy (Deutsch, 2017, p. 18).

After the Fukushima accident, the attitudes about nuclear energy changed in many member states (Deutsch, 2017). Germany was the only EU member state to officially alter its domestic nuclear energy policy to phase out all nuclear energy by 2022 (European Parliament, 2016). Germany officially disconnected its final nuclear powerplant from the grid in April 2023 (Federal Office for the Safety of Nuclear Waste Management, 2023). Following Fukushima, Lithuania froze its plan to build a new nuclear powerplant following a referendum on the matter (European Parliament, 2016). Furthermore, However, despite the increased focus on nuclear energy in the aftermath of the Fukushima accident, the interest for nuclear energy in the media rapidly decreased already after a year after the accident, until it halted at a "business-per-usual"-level by 2014 (Minin, 2020, p. 149). This also suggests that the arguments revolved around powerplant safety directly after the accident, and that it is possible that other frames

were dominating already a few years after the accident.

As demonstrated in the above paragraph, some states are stably pro-nuclear energy, and states that are stably against the application of nuclear energy. It is, however, important to note that several member states' ambitions in the field of nuclear energy change over time, in line with other policy areas (Müller & Thurner, 2017). This sets a further precedent that the framing of nuclear energy changes over time.

With this in mind, it is valuable to explore the topics of debate in nuclear energy debates in Europe after Fukushima. Deutsch (2017, p. 33) mapped these topics within EU member states. She found that the supporters of nuclear energy argue that it is a climate-friendly way of gaining energy security. In his discourse analysis on nuclear energy after Fukushima, Minin (2020, p. 170) finds that nuclear energy as a decarbonization source is a hot topic among supporters of nuclear energy. There is also a question of how powerplants and maintenance will be financed. Salvador (2021, p. 237) argues, however, that this is disputed, and that many opponents of nuclear energy argue that nuclear energy cannot be classified as green. This may be supported by the member states' lawsuit against the EU for labelling nuclear energy as green in the taxonomy, as mentioned above. Safety concerns also a topic that is used when talking about nuclear energy. Many associate nuclear energy with the risk of accident at powerplants after the incidents at Chernobyl and Fukushima (Salvador, 2021). This sets a precedent for powerplant safety as a possible frame used by MEPs in debates on nuclear energy, particularly in the early years after the Fukushima accident. There are also an economic aspect of nuclear energy, particularly related to high costs (Salvador, 2021, p. 237). The construction cost of nuclear powerplant is significantly higher than for fossil fuels (Deutsch, 2017, p. 24). Deutsch (2017) also claims that funding of nuclear energy has been a topic of previous debates on nuclear energy.

Summary

We see that the increased climate ambitions of the EU have opened for a crossover between climate, environmental and energy policy, and that the EP has played a significant role in the greening of the EU. The question is where nuclear energy exists in this policy mix, considering the vastly different application from the member states.

This thesis is looking to expand on the literature of the crossroad between climate, environmental and energy policy in the EP, and thus discover how nuclear energy is framed in the parliament in the parliament; both how nuclear energy has become green over time, and who in the EP is arguing that nuclear energy is green. This sets the foundation for the theoretical

framework.

3.0 Theoretical Framework

In the following chapter, the theoretical framework that will be used in the analysis will be introduced. The chapter is divided in two parts. The first part will be concerned with framing theory as a tool to understand how Members of the European Parliament (MEPs) understand the issue of nuclear energy, and how they accordingly build their arguments that support their views. The second part will cover conflict lines in the EP, as well as frames that drive the debate on nuclear energy in certain EU member states. This may help us build some expectations about how the MEPs will argue on the issue of nuclear energy. It will additionally provide some insights into the types of frames that may be applied by the MEPs from different nationalities and party groups.

A general assumption in this chapter is that the further away from the Fukushima accident the debate is, the more likely it is that MEPs will frame nuclear energy as green. Secondly, MEPs from countries and ideologies traditionally in favour of nuclear energy will also frame nuclear energy as green. Italy and Germany have had great domestic resistance towards nuclear energy for several decades, and the Fukushima accident strengthened this opposition. In France, Spain and Finland, there were initially protests against nuclear energy. However, these protests gained lower numbers than in the likes of Italy and Germany (Bernardi et al., 2018). It is thus interesting to figure out how the arguments about nuclear energy in the EP have evolved from Fukushima to the Complimentary Climate Delegated Act; or how the debate evolved from revolving around powerplant safety, to the degree of sustainability of nuclear energy. The implication is that the green frame has become dominant over time – and this thesis aims to figure out if this is the case.

There are several benefits of analysing EP debates. Firstly, it makes it possible to understand the reasoning behind the MEPs' position on the matter. By only analysing roll-call votes, it is possible to understand *whether* changes have happened. Debates, on the other hand, are a tool to further understand *how* the changes happened. Furthermore, because the speaking time in the EP debates is limited, the analysis of debates is an efficient method to understand the MEPs' policy position and argumentation (Petri & Biedenkopf, 2021). Therefore, it is also easier to analyse how the argumentation has changed over time, and which topics concerns the MEPs the most in each legislative term.

Another advantage of analysing parliamentary debates, in general, is that we may acquire the societal stance of a topic (Santos Pereira et al., 2017). As the MEPs are elected by the citizens

of the EU, the debates may also provide a general overview of the debate on nuclear energy in different communities in the EU.

3.1 Framing

The issue of nuclear energy in the EP is an example of what Schön & Rein (1994) call a *policy controversy*, which means that the solution to the issue cannot easily be solved by appealing to facts, because the parties disagree on how the facts should be applied to the issue. This means that the parties for instance disagree about which facts are relevant to the issue. It could also mean that the parties agree on which facts are relevant, however, they interpret the facts differently.

In order to solve policy controversies and reach an agreement, the policy makers must understand each other's comprehension of reality, or frames (Schön & Rein, 1994, p. 45). In the case of nuclear energy, an example of this is whether a MEP understands nuclear energy as a climate-friendly or an environmental hazard, and the reasoning behind this comprehension of the issue.

"Framing" refers to the act of constructing the perception of reality by a certain actor (Fiss & Hirsch, 2007). While constructing their reality in a claim, the actors will focus on "what will be discussed, how it will be discussed, and, above all, how it will not be discussed" (Altheide & Schneider, 2013, p. 52).

The goal of a framing analysis is to understand how political issues are identified and defined by an actor (Daviter, 2018, p. 91). Boasson (2015, p. 68) describes how different actors may frame an issue differently depending on their background; an engineer and an economist may have vastly different views of what is important in creating nuclear energy policy. Davitier (2018) argues that this is a reason why framing analysis of the EU is particularly interesting. This is because many different policy communities will frame an issue differently depending on their own policy goals. This also applies to the case of energy policy; according to Kinski & Rippoll Servent (2022), the EP's role as an environmental champion lost its acceleration as the climate policy intertwined with other policy areas. Therefore, it is reasonable to expect that nuclear energy also will be framed differently, depending on the policy community the MEPs are part of.

In summary, how a policy actor frames an issue can provide valuable information in explaining how the actors are behaving in a policy process (Shim et al., 2015, p. 52), as it provides an insight into how the actor comprehends reality; how they legitimize their understanding of the issue (Edberg & Tarasova, 2016).

For this thesis, we are concerned with rhetorical frames, or how a MEP use language to persuade their audience of their understanding of a concept (Schön & Rein, 1994). To analyse these frames, an analyst may apply several tools. This thesis will utilise such frames building on the framework of Rein & Schön (1977), expanded by van Hulst and Yanow (2016). The original framework developed by Rein & Schön (1977) contains (1) naming, and (2) storytelling. Van Hulst & Yanow add selecting and categorizing to the first bloc, as well as a new concept called sensemaking. These elements are often used in combination with each other to create what the actor perceives as a persuasive argument. By analysing these elements, we may obtain an understanding of the MEP's distinction between what is significant, and what is irrelevant in a certain case (Rein & Schon, 1977).

Sense-making refers to how the world is constructed by humans; Humans collect information about a case through their senses, and the collected information creates an understanding of what is the core of the case(van Hulst & Yanow, 2016). There is thus a normative aspect; through sense-making, a policy-maker may through their perception of a case understand what the case *is* right now, and what the case *ought* to be (van Hulst & Yanow, 2016, p. 98). An example of sense-making could be that an actor believes that nuclear energy currently is an issue concerning energy because of the ongoing energy crisis. However, the actors themselves are convinced that nuclear energy is not an energy issue, it is a climate issue.

Naming, selecting, and categorizing refers to the language used by the speaker to join disparate elements into a coherent pattern (van Hulst & Yanow, 2016). Through **naming**, a speaker uses words to emphasize their understanding of a case. For instance "single-parent families" rather than "broken homes" sets a precedent for how the argument is perceived (Rein & Schon, 1977, p. 239). Naming can also be done by expressing the issue through a metaphor. An example of this is the use of the term "greenwashing", by the opposers of nuclear energy as green. In **selecting**, the actor focuses on the elements of a case that should be focused on, and which parts should be ignored. The selection may vary based on the audience. In the case of nuclear energy, a MEP may refer to nuclear energy being "environmentally friendly" and refer to the zero emissions argument. However, they may leave out the arguments that may paint nuclear energy as environmentally unfriendly, such as waste management. **Categorizing** refers to the elements included in word choice (van Hulst & Yanow, 2016, p. 99). This also includes the exclusion of certain elements. For instance, by referring to energy security in "Central and Eastern Europe", Western, Southerns and Northern Europe are left out of the

argument. Through the combination of naming, selecting and categorizing, each person creates their perspective of how they perceive the issue (van der Meij et al., 2017).

Storytelling is a strategy where the speaker uses elements from naming, selecting and categorizing to compress the most important elements of a case to a story with a plot (van Hulst & Yanow, 2016, p. 97). The story will explain the situation, why it is problematic, and suggest a solution. Story-telling is thus a way for actors to persuade their audience of the legitimacy of the frame, and thus compete for limited resources (Boyd & Lorefice, 2018, p. 577).

This thesis will only use naming-selecting-categorizing as a framework for analysis. Firstly, because storytelling is composed of naming-selecting-categorizing, I consider it redundant to also cover storytelling in the EP speeches. Furthermore, I understand sensemaking to be similar to the definition of "framing" as a concept, and it is thus easier to work with only naming-selecting-categorizing.

3.1.1 Frames

In the context chapter, we identified topics that have steered the debate on nuclear energy in the past; Environmental hazard, low-emission, powerplant safety, energy security and cost. These topics may be transformed into frames. These frames are the basis for the analysis. I expect these frames to be revealed through naming, selecting and categorizing in the speeches.

Model 1: Nuclear energy frames

Topic	Frame	Frame
Climate	Environmental hazard - Naming - Selecting - Categorizing	Low-emission - Naming - Selecting - Categorizing
Security	Powerplant safety - Naming - Selecting - Categorizing	Energy security - Naming - Selecting - Categorizing
Economy	Cost - Naming - Selecting - Categorizing	

These frames may be used in a positive or negative sense, depending on the overall stance of the MEP. For instance, a MEP might argue that nuclear energy is green, but that powerplant safety is still conditional for nuclear energy to me used at all.

3.2 Cleavages in the EP

It is valuable to study the already identified cleavages in the EP, in order to gain expectations about which MEPs use what type of arguments. As mentioned earlier, Kinski and Rippoll Servent (2021) identify three conflict lines that affect the behaviour of MEPs in the case of climate. Previous research on conflict lines in the EP suggests that MEPs usually stick to their transnational partly lines rather than national lines when voting (Hix & Høyland, 2022, p. 69). Individual MEPs will generally follow voting instructions given to them by party whips, who also monitor whether these instructions have been followed (Hix & Høyland, 2022, p. 65).

It is, however, not always the case that the MEPs vote according to their party group. A question that arises accordingly is about when the MEPs stray away from their party group and cast their vote on other grounds. The claim that high-salient issues will have MEPs stray away from their party groups towards national lines may still justify expectations in the nationality cleavage

(Klüver & Spoon, 2015). Although we may apply valuable expectations from the voting cohesion theory to this thesis, I expect that MEPs still may argue their case differently based on their nationality, because nuclear energy is a controversial enough topic to be named an issue of high salience, as we have seen in the previous chapters. In other words, although MEPs might still vote following with their ideology, they may still justify their vote on different grounds, in which national considerations may trump.

3.2.1 Political Affiliation

The following part will concern political affiliation as a means to create expectations for which MEPs frame nuclear energy as green. Firstly, the party groups in the EP will be covered, as they are the foundation of ideology in the EP. Two significant cleavages within the EP are the left-right cleavage and pro/anti EU cleavage. These two cleavages were selected to build expectations on who will use what type of arguments in the EP. The left-right cleavage was chosen because this is a common cleavage used to determine disagreement within the EP. The pro/anti EU cleavage is related to being pro integration or pro sovereignty. To sum up, within this conflict line, it is expected that MEPs within the same party group or ideology will frame the issue of nuclear energy similarly.

3.2.1.1 Party politics in the EP

Model 2 below presents of all the party groups represented in the EP between 2009-2024, along with their political orientation. This is the foundation of the ideological expectations in this thesis.

Model 2: Party groups and their political orientation (Burns, 2019a, p. 183; Hix & Høyland, 2022, p. 67).

EP party group	Political orientation
Confederal group of European United Left/Nordic Green Left (GUE/NGL)	Left wing
Group of the Progressive Alliance of Socialists and Democrats (S&D)	Centre-left
Group of the Greens/European Free Alliance (Verts/ALE)	Environmentalist and regionalist
Group of the Alliance of Liberals and Democrats for Europe (ALDE)	Liberal

European People's Party (PPE)	Centre-Right Christian Democrat and Conservatives
European Conservatives and Reformist Group (ECR)	Centre-right Conservative, Eurosceptic
Europe of Freedom and Democracy Group (EFD)	Eurosceptic and right wing
Europe of Nations and Freedom (ENF)	Eurosceptic and right wing
Identity and Democracy (ID)	Eurosceptic and right wing
Europe of Freedom and Direct Democracy Group (EFDD)	Eurosceptic, various
Renew Europe (Renew)	Liberal
Non-inscrit/non-affiliated (NI)	Various

The party groups are formed based on ideology, and act as a bridge between the EU and national political parties (Burns, 2019a). However, it is not always the case that MEPs affiliate themselves with peers of the same ideology. An example of this is the EFDD group, which consists of MEPs from different ideologies; for instance the right-wing Euroscepticism from the United Kingdom Independence Party (UKIP), and members of the Italian Five Star Movement who identify themselves on the centre (Burns, 2019a). There are thus several grounds of which a party group may be formed. The accuracy of the left-right analysis could thus be improved if it was based on national parties instead of party groups. However, the main rule is that the party groups are based on ideology, and it therefore makes sense to operationalize left-right on the basis of party groups. The split between the Eurosceptic groups and the non-Eurosceptic groups creates the foundation for the pro/anti-EU cleavage in the study.

Left-right

Firstly, the left-right cleavage will be covered. Traditionally, the left-right cleavage is based on the typical economical cleavage; with the left supporting redistribution policies and regulation of the market, and the right advocating for lowering taxes and free markets (Hix et al., 2019, p. 1). However, we now see that the left-right cleavage is spilling over to other policy areas. Hix et al. (2019, p. 19), for instance, find that the left-right cleavage is a good predictor for MEPs' behaviour on environmental matters.

Verts/ALE and the ALDE group tend to assert great influence when voting on environmental issues in the EP (Buzogány & Ćetković, 2021). These two party groups, as well as the Socials and the Democrats (S&D) are often voting in favour of climate policies (Buzogány & Ćetković, 2021). Similarly, the Eurosceptic groups Europe of Freedom and Direct Democracy (EFDD) and Europe of Nations and Freedom (ENF) tend to abstain from voting as a means to express criticism on climate issues (Wendler, 2019, p. 331). This can be taken further to a left-right perspective, as Hix & Høyland (2022, p. 71) argue that a centre-left coalition between S&D, ALDE, Verts/ALE and GUE/NGL has been dominating in environmental policy. Kinski & Rippoll Servent (2022) argue that the left wing, both pro- and anti-EU, are positive towards climate goals set by the EP. At the same time, the Eurosceptic right is negative towards such goals (p. 258). However, Hix & Høyland (2022, p. 71) also argue that on energy policy, a centre-right coalition between ALDE, EPP and ECR is dominating. This sets an expectation that there may be a left-right cleavage, however, as the left is dominating on environmental topics and the right is dominating on energy topics.

In order to build some expectation on who will use what type of arguments, it can be useful to look to the literature on nuclear energy debates in other parliaments. In the Swedish debate on nuclear energy from 2010, before the reintroduction of nuclear powerplants in the country, a clear left-right divide was discovered (Edberg & Tarasova, 2016).

The centre-right coalition framed nuclear energy as an environmentally friendly alternative to fossil fuels, and that private companies should govern the powerplant with the philosophy that the market would phase out nuclear energy if it is not profitable. Furthermore, the centre-right coalition argues that nuclear energy should be a part of a diverse energy mix. On the other side, the red-green coalition is framing nuclear energy as an issue of security, such as nuclear accidents and radiation. This coalition is also concerned with the storage of nuclear waste. Furthermore, they believe that the political system should be responsible for the domestic energy mix, due to disbelief that market powers have the environment's best interest in mind. Similar patterns are observed in Spain and Belgium, where the left and greens have been arguing against nuclear energy since before the Fukushima disaster (Bernardi et al., 2018).

It is thus reasonable to expect that the right will frame nuclear energy as green, while the left will not frame nuclear energy as green.

Pro/Anti EU

Within the conflict line of ideology, it is reasonable to include the pro-/anti-EU conflict line. This cleavage is not an isolated expectation, but it is still valuable to mention because of the focus Euroscepticism has obtained over that past decade, and its possible implication for climate and environmental policy in the EU. The pro/anti EU cleavage has been more noticeable in the past couple of parliamentary sessions, arguably because of the election of Eurosceptic parties (Hix et al., 2019). This means that a wish for sovereignty in the field of energy may trump the vision of a united Europe in the field of energy policy, which also suggests that MEPs from Eurosceptic party groups may argue similarly to their national peers rather than their party peers. Buzogány & Ćetković (2021) argue that MEP behaviour in the area of European climate policy may best be explained by the pro/anti EU cleavage. Furthermore, right-wing Eurosceptic parties in Germany, the Netherlands, Spain, France, Poland and the UK are generally against energy transition towards traditional renewables (Hess & Renner, 2019). Hard Eurosceptic party groups in this thesis include EFD, EFDD and ID. Soft Eurosceptic groups include of ECR and the left group GUE/NGL (Ripoll Servent, 2019). The expectation is thus that these groups will frame nuclear energy as green. However, Kinski & Rippoll Servent's (2022) finding that both the pro- and anti-EU left is positive towards climate policy suggests that the GUE/NGL will rather argue in line with the left party groups rather than in line with the right Eurosceptic groups.

Taken together, it is thus reasonable to expect different framing of nuclear energy from the different political blocs in the EP. In an environmental frame, the political right is expected to frame nuclear energy as green, as they are focusing on the claim that nuclear energy is an energy source without emission during energy production. Conversely, the political left is expected to focus on the alleged environmental hazard. Furthermore, the Eurosceptic party groups are also expected to frame nuclear energy as green.

3.2.2 National conflict lines

In certain cases of high salience, MEPs vote according to national ties rather than ideological lines. Despite the assumption that individual MEPs rarely split from their party group, national parties are still strong within the party groups (Hix & Høyland, 2022, p. 65). As previously mentioned, existing literature suggests that for issues of high salience, MEPs are more likely to vote according to national lines (Klüver & Spoon, 2015). Considering the controversy of nuclear energy in the EU explained in the background chapter, it is reasonable to assume that

nuclear energy is such an issue. In the analysis section of this thesis, a finding may be that national nuclear energy policies are a better indicator of how MEPs vote on nuclear energy than party groups in the EP. Furthermore, in some EU member states such as Portugal, there is a consensus against nuclear energy amongst the MEPs. Considering the assumption that nuclear energy is considered an issue of high salience, it is thus fair to expect that MEPs from these countries are more likely to not frame nuclear energy as green.

Assumptions on which nations will frame nuclear energy as green may be based on the nuclear energy strategy of the MEP's home country. In 2020, 13 EU member states owned nuclear power reactors. This leaves 14 member states with no nuclear power in their energy mix. However, it is necessary to point out that some of these are currently in the state of phasing out nuclear energy (Belgium and Spain)(Aszódi et al., 2021). As mentioned, Germany closed its last powerplant in 2023. At the same time, some member states aim to introduce nuclear energy in the future (Poland), as well as expand their current programs; Hungary, Slovenia, Czech Republic and Slovakia. France and Romania are planning on maintaining their existing programs (Aszódi et al., 2021).

It is also necessary to point out that nuclear energy policy, as in many other policy areas, is dynamic. This implies that countries' views on nuclear energy may differ depending on which parties are in government, as well as the parliament composition (Müller & Thurner, 2017). This is transferrable to the EP, as the MEPs are elected by the citizens of their home country. It is thus reasonable for the MEPs to argue in line with their national parties in order to get re-elected for the next parliamentary term.

Map: Nuclear energy in the EU in 2020 (Eurostat, 2022).

Map: Nuclear energy in the EU, 2020

683 512 GWh gross nuclear electricity production

Member States with nuclear electricity production

Nuclear electricity production (GWh)

EU Member States with no nuclear electricity production

Finland 23 291

Sweden 49 198

Czechia 30 043

Netherlands 4 087

Germany 64 382

Slovakia 15 444

Hungary 16 055

Belgium 34 435

Romania 11 466

Bulgaria 16 626

France 353 833

Spain 58 299

Slovenia 6 353

14 EU Member States without nuclear electricity production:
Denmark, Estonia, Ireland, Greece, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Malta, Austria, Poland, Portugal

Administrative boundaries: © EuroGeographics © UN–FAO © Turkstat
Cartography: Eurostat – IMAGE, 1/2022

ec.europa.eu/**eurostat**

According to Zapletatova & Kominkova (2020), MEPs from the Visegrad countries (Czechia, Slovakia, Poland and Hungary) tend to disagree with transnational party lines to a larger degree, than MEPs from other EU member states. An explanation for this phenomenon might be that climate and energy are still contentious topics domestically in these countries. It is, therefore, reasonable to expect that this finding may be transferrable to the field of nuclear energy and that MEPs from central and eastern Europe may follow national party lines in their arguments.

The debate on nuclear energy in Portugal was initially about economic prosperity due to uranium supplies (Santos Pereira et al., 2017). From 2009-2013, arguments about nuclear risk/uncertainty and environmental aspects gained a larger role in the domestic Portuguese debate. Despite the question of whether Portugal should open a powerplant has made its way to the agenda, the Portuguese MPs are generally against this suggestion. One MP argued that despite nuclear powerplants emitting zero emissions, it would still be wrong to introduce nuclear energy due to the risk of accidents, nuclear leaks and explosions (Santos Pereira et al.,

2017). Despite the environment gaining a larger role in the Portuguese debate on nuclear energy, the frame of nuclear energy as an environmental hazard won in the Portuguese parliament. This also sets a precedent that MEPs from member states that generally are against nuclear energy also may argue against nuclear energy in the EP (cf. Deutsch (2017)).

Another possible conflict line within the nationality bloc is energy interdependence with Russia, which is particularly relevant considering the Russian invasion of Ukraine and the introduction of the REPowerEU scheme. Norrevik (2021) argues that MEPs from countries economically dependent on Russia, for instance through foreign direct investment are more likely to vote in favour of pro-Russian policies in the EP. According to Nuttall & Newberry (2010) (Cited in Schubert et al., 2016), this theory may be transferred to the use of nuclear energy. The authors claim that some Eastern EU member states which are dependent on Russian gas in their energy mix may have a more positive stance towards the use of nuclear energy than states who are self-sufficient and highlights Central and Eastern Europe. An explanation for this is that nuclear energy is perceived as a way to secure domestic energy supply, and reduce dependence on Russia (Ferguson, 2011, p. 59; Kratochvíl & Mišík, 2020). This is related to Russia being considered an unreliable energy supplier (Casier, 2011). Member states considered highly dependent on Russian gas are Austria, Czechia, Slovakia, Poland, Hungary, Estonia, Latvia, Lithuania, Finland, Bulgaria and Greece (Stern et al., 2014)[1].

An expectation is thus that these countries, who deem nuclear energy as beneficial, also frame nuclear energy as green over time. However, it is still important to note that some MEPs may support nuclear energy without framing it as green. It is, for instance reasonable to expect that other aspects trump the green aspect. For instance, the security of energy supply particularly in Central and Eastern Europe where energy security may be more important than the green aspect (Skjærseth, 2021). Schubert et al. (2016) further argue that states who already have a diverse enough energy mix may deem nuclear energy redundant. Countries with a diverse energy mix without nuclear energy are thus expected to refrain from framing nuclear energy as green. Similarly, countries with a positive experience with nuclear energy are also more likely to have high public acceptance of nuclear energy (Kim et al., 2013).

Dependence on Russian energy supplies is also a hot topic in domestic nuclear energy debates. Finland is an example of a member state where supporters argue that Russia is an unreliable

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[1] See Stern et al. (2014) for their operationalization of countries highly dependent on Russian gas.

energy exporter, and that dependence on Russian energy could cause harm to both safety and that economy (Teräväinen et al., 2011).

3.3 Expectations

Based on the above literature, we may identify certain expectations of how the debate on nuclear energy will unfold. In the table below are the main frames I expect the MEPs to apply in their arguments, as well as whether it corresponds with party- or national groups, and which framing tools may be observed. Let us bring up the research question once more:

How has the framing of nuclear energy evolved in the European Parliament since the Fukushima accident, and who is framing nuclear energy as green?

Firstly, let us address the first part of the research question. I expect that in the aftermath of the Fukushima disaster, it is unlikely that anyone would frame nuclear energy as green. However, when there is less public focus on the disaster, it is then more likely that supporters of nuclear energy will apply a green frame to nuclear energy. As the Complimentary Climate Delegated Act passed through the European Parliament, it is reasonable to expect that the frame of nuclear energy as a green energy source gains more leverage.

The second hypothesis is that the political right may frame nuclear energy as green, while the left may not apply such frames. This has a basis in cleavage theory, which suggests that there is often a left-right cleavage that steer the MEPs' behaviour in environmental and energy policy (Hix & Høyland, 2022). Furthermore, evidence from the Swedish parliament suggests that the right will argue that nuclear energy is green, while the left will not frame nuclear energy as such (Edberg & Tarasova, 2016).

The third and fourth hypotheses concern the nationality cleavage. The third hypothesis is that MEPs from countries that already produce nuclear energy, also will frame nuclear energy as green. The fourth and last hypothesis is that MEPs from countries dependent on Russian energy are expected to frame nuclear energy as green. This is because, as mentioned in the literature, that countries dependent on Russian energy may be more eager to secure energy independence. However, I expect to see a north-south-east-west divide for these two hypotheses. Because western and northern member states historically have been more concerned with climate, I expect MEPs from these regions to focus on environmental arguments. On the other side, as member states in the south and east have been more concerned with securing energy supply, I expect MEPs supporting nuclear energy from these member states to use an energy security frame in their speeches.

Another aspect to consider is that although nuclear energy becomes green in the taxonomy, does not mean that nuclear energy is considered green all over. Nuclear energy became green in an economic sense, as a transition from fossil fuels to conventional renewable energy sources.

Taken together, the four hypotheses that will create the structure of the analysis are:

1. Nuclear energy will become greener over time.
2. The political right argues that nuclear energy is green, while the left does not.
3. MEPs from member states in possession of nuclear energy will frame nuclear energy as green.
4. MEPs from member states highly dependent on Russian gas will frame nuclear energy as green.

Now that we have covered the theoretical framework, it is suitable to move to the methodolody; how I am going to test whether these hypotheses can explain how the framing of nuclear energy has changed since the Fukushima accident, and who is framing nuclear energy as green.

4.0 Methodology

In this chapter I will walk the reader through the thesis' research design, data material and research method as well as validity and reliability. This chapter gives the reader a detailed insight into the methodology used, the choices made, and why I made the choices I made. It is essential for the quality of the research that conscious decisions are made on these matters. It will firstly cover the research design. Thereafter, it will walk the reader through the chosen method; qualitative content analysis. It will then introduce the empirical data; debates in the EP. Thereafter, it will walk the reader though the coding of the empirical material. Lastly, possible limits of the analysis will be covered through an assessment of validity and reliability.

4.1 Research Design

The purpose of this thesis is to gain an understanding of how the argumentation of nuclear energy in the EP has evolved, to the point where some nuclear projects were included in the taxonomy. This is a suitable time to revisit the research question:

How has the framing of nuclear energy evolved in the European Parliament since the Fukushima accident, and who is framing nuclear energy as green?

To answer the research question, debates in the EP will be analysed through a qualitative content analysis. These debates not only mirror how the discussion is framed in Brussels, however, as the MEPs are directly elected by the citizens of the EU, the debates amongst the MEPs may also reflect the debate within the member states. Furthermore, debates allow the MEPs to frame the debates in a way they deem persuasive, and justify their suggestions (Kinski & Rippoll Servent, 2022, p. 252).

4.2 Content analysis

A qualitative content analysis of EP debates will be conducted to identify the evolution of the arguments used in the debate about nuclear energy, and how nuclear energy was labelled green in the taxonomy. The goal is to understand which MEPs from which parties and countries, use what arguments in the debates on nuclear energy. It is thus also valuable to reveal what kind of tools the MEPs use to persuade law makers on nuclear energy, or the type of framing they use.

A content analysis is particularly useful to draw out certain features of a phenomenon, as well as classifying these features (Petek et al., 2022, p. 721). Any sort of qualitative data material can be applied to such an approach. In Altheide & Schneider's (2013) approach to content

analysis[2], they promote the movement between the different research stages. Rather than rigidly following predefined categories, there is space to move between coding, analysis, and interpretation. Although some initial categories are applied, there is also room to refine these categories along the way, as well as add new categories that are deemed fitting. These characteristics make a content analysis a flexible approach, where there is space to alter the approach based on the data material and research question.

4.3 Data

The data material used is the debates in the European Parliament, referred to in Table 4. Four EP debates in the timeframe 2011 - 2022 were analysed: 2011, 2013, 2015 and 2022. This means that three legislative terms are included: 2009 – 2014, 2014 – 2019, and 2019 – 2024.

Model 3: Debates for analysis

Debate name	Year
Lessons to be drawn for nuclear safety in Europe following the nuclear accident in Japan	2011
Risk and safety assessments of nuclear powerplants in the European Union ("stress tests")	2013
European energy security strategy	2015
Objection pursuant to Rule 111(3): Amending the Taxonomy Climate Delegated Act and the Taxonomy Disclosures Delegated Act	2022

A total of 408 speeches were held in these debates, including statements from the President, authors and commissioners. After removing irrelevant speeches, a corpus of 201 speeches was left for analysis. Irrelevant speeches are speeches or statements by the President, Commissioners and authors, as these are not relevant to how the debate is unfolding in the EP.

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[2] Altheide & Schneider (2013) call their approach to content analysis "ethnographic content analysis". In order to avoid confusion, this thesis will apply the term "content analysis" to all approaches concerning qualitative content analysis.

Speeches that did not contribute to the debate on nuclear energy were also excluded, such as speeches on other energy sources. Blue-card questions and answers were included in the corpus, as long as they were relevant to the discussion on nuclear energy. Speeches from MEPs from the UK pre-Brexit are also included. This is because the UK MEPs also have contributed to the debate on nuclear energy on a European level, and they may affect the arguments within the party groups. The distribution of speeches by nationality, EP party group and year is shown on Models 4-6.

Model 4: Number of MEPs distributed by nationality.
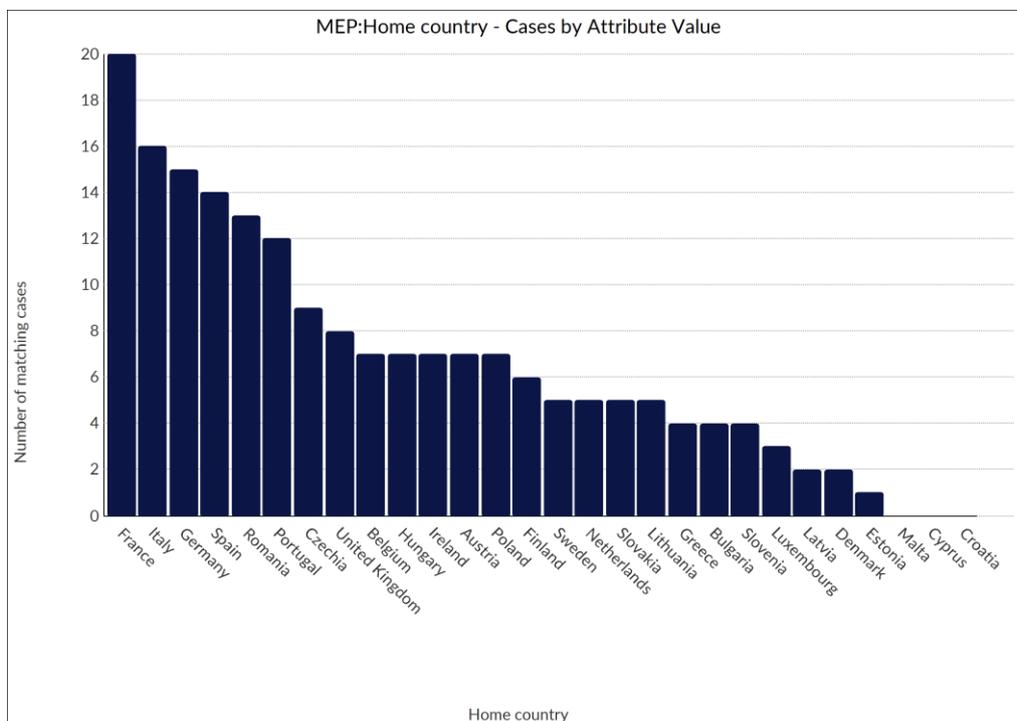
Model 5: Number of MEPs distributed by party group

MEP:EP Party Group - Cases by Attribute Value
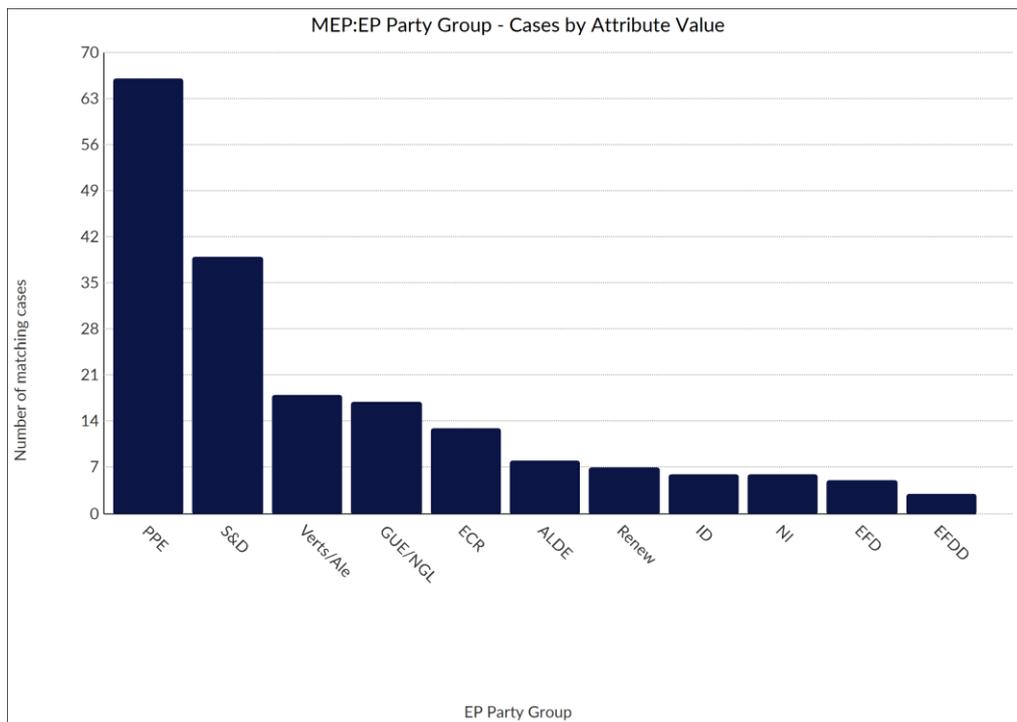
Model 7: Number of speeches distributed by year


MEP:Year of speech - Cases by Attribute Value
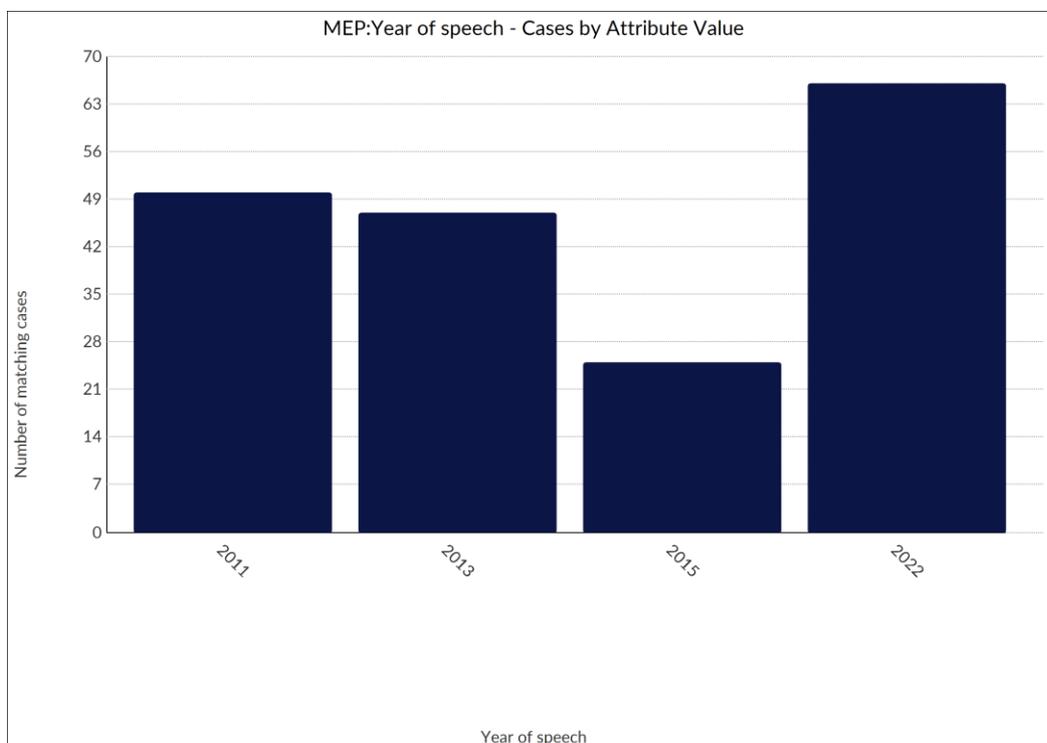
The speeches are already transcribed in the language spoken in the speech. All speeches in the debate from 2011 were already translated into English. The speeches in languages unknown to the coder were translated into English using the online translation service DeepL[3]. As this translation service does not support translation from Irish or Croatian, the Irish and Croatian speeches were translated by Google Translate. Kinski & Ripoll Servent (2022) utilise this method to translate EP debates in their study on climate ambition in the EP. They found the translation to be "highly accurate" when cross-checked with native speakers (Kinski & Ripoll Servent, 2022, p. 257). It is, however, important to note that some of the content of the speeches likely is lost, and the MEPs true opinion may not have been rightfully captured. For the speeches in Dutch, German, Swedish and Danish, languages I have sufficient knowledge of to understand, I translated myself.

The debates were chosen with the help of the search function on the EP website, where all debates are publicly available[4]. The debate for each chosen year considered "most relevant" when searching for "nuclear" was chosen. This means that the debate per year where the word "nuclear" was used the most was chosen for analysis. In 2011, only debates after 11th March were eligible, as this is the starting point of the analysis' time frame. Likewise, in 2022, only debates executed before 7th July were eligible for analysis, as this is when the EP approved the Complimentary Climate Delegated Act, and is thus the final point of the chosen time frame. The debates had to cover nuclear energy strategy in Europe, such as the energy union, or . Certain debates where the word "nuclear" was used the most were not chosen, simply because they concerned topics outside of the research question. These are for instance debates regarding nuclear weapons and nuclear energy in foreign policy. The debate chosen from 2013 was the 4th most relevant according to the EP search function. The three debates deemed more relevant were on foreign policy (such as nuclear powerplant safety outside of the EU) and nuclear research. Likewise, in 2015, the 7th most relevant debate was chosen, as the first six debates were concerned with foreign policy and nuclear contamination. The plan was initially to code one debate for every two years. However, as I started collecting the data, I found that there were a very limited number of debates concerning nuclear energy between 2015 and 2022. This is in line with Minin's (2020, p. 149) finding that nuclear energy was a decreasingly popular topic in the European politics and society in the years after the Fukushima accident. I therefore

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[3] https://www.deepl.com/en/translator
[4] https://www.europarl.europa.eu/plenary/en/debates-video.html

decided to leave the years in between out of the analysis, as there would not have been enough empirical material.

4.4 Coding

Coding is the act of categorizing empirical material (Gibbs, 2018, p. 54). This means that passages of text is given a category, which makes it easier for the analyst to explore the data in an organized manner. The coding in this analysis is performed with the aid of NVivo based on a code book[5] I have developed with the analytical framework as a foundation, as explained in the previous chapter. This means that the analysis is based on a deductive strategy; the analysis is based on a pre-developed framework (Bratberg, 2021, p. 108).

A codebook was created to guide the coding. Three codes were chosen beforehand according to the analytical framework: Environment, security and economy. These codes are perceived as the main frames revealed in prior literature on nuclear energy debates, and we therefore presume that the debates analysed in this thesis also cover these topics. The framing tools introduced in the theory chapter, naming, selecting, and categorizing, were added as child codes. This is to figure out how the different MEPs argued their case; how naming, selecting, and categorizing were utilised to build their argument. The 2011 and 2022 debates were test-coded, to operationalize the codes to fit the data material: what type of argument fits under which code. This helped refine the categories, and to understand what to look for in each code.

It should be noted that the frames used are not strictly positive or negative. This is because the frames do not necessarily determine whether or not a MEP is for or against nuclear energy. For instance, an MEP could initially talk about powerplant safety, and still end the argument framing nuclear energy positively through an energy security frame. On the same note, there are several MEPs using powerplant safety as their main frame while remaining positive towards nuclear energy.

Each speaker was given case attributes in each debate. The attributes were EP party group, nationality, year of speech, and whether they speak on behalf of their party group. The MEPs who held speeches in two or more years thus had a case for each of the years they held speeches, which made it possible to catch both party switches and changes of argument over time. The party group of the MEP stood next to the theme's name in the speech. The MEPs' nationalities were found in the directory on the EP web site[6]. The year of speech was given in order to be

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[5] See appendix for the code book.
[6] https://www.europarl.europa.eu/meps/en/directory (Accessed 27/04/2023)

able to measure how the debate on nuclear energy over time; the first part of the research question. The case attributes of nationality and party group was given with regards to the second part of the research question; to be able to measure differences between the MEPs framing of nuclear energy based on respectively nationality and party group.

Afterwards, the framework matrix function of Nvivo was utilized to find the structure about which MEPs used which frames and which framing tools were observed, based on nationality, EP party group and year of speech. The framework matrix categorizes the material by the codes, similarly to Model 1 on page 15. This means that I could easily find which MEPs use which frames, and where naming, selecting and categorizing is observed for each frame.

Next, I went through the speeches in the framework matrix, so that I could read the speeches in the context of the pre-selected frames. This also let me recode passages that I missed or coded wrong in the first round of reading through the material. I read through the speeches frame by frame, and changed the attribute value based on which expectation I wanted to test. This let me find patterns in the corpus, as it let me group the speeches together based on attribute value. For instance, to sort speeches framing nuclear energy as low emission by the MEP's nationality.

4.5 Validity and reliability

To assess the quality of the study, we may look to external and internal validity, as well as reliability. Validity refers to the degree of whether the study measures what we intend to study, and can be divided into external and internal validity (Bratberg, 2021, p. 138). External validity refers to the study's ability to generalize. Internal validity refers to the degree that the study measures the concept it is meant to study without bias (Andrade, 2018). Reliability refers to the study's replicability; if another researcher followed the same steps as described in the methodology chapter, would they achieve the same result (Bratberg, 2021, p. 138).

4.5.1 External validity

Firstly, it is necessary to evaluate to which degree the study's ability to generalize: the external validity.

It should be taken into consideration that the number of representatives each member state has, depends on the population of the member state. This also means that some member states only have a couple of MEPs, and not all of these will hold a speech in every debate. This may be a challenge for the external validity, as it is difficult to draw generalizations based on member state.

Another aspect that may affect the external validity is the length of the debates. The debates have different lengths, as shown on Model 7. This may be tied to nuclear energy having a decreasing importance of nuclear energy on the agenda between the Fukushima accident and the Complementary Climate Delegated Act, as explained by Minin (2020). This means that some debates will have a larger impact on the study than others, and the topics of the longer debates may dominate the overall impression of the findings.

Furthermore, there is another external validity issue present in the sense that the topic of the debates is pre-chosen, and therefore steers the direction of the debate. The EP debates about nuclear energy usually concern a more general topic regarding energy, or a certain dimension of nuclear energy. This may cause some of the arguments about nuclear energy to be suppressed, for the reason that the argument simply is not relevant to this particular debate. For instance, the first debate after Fukushima is on powerplant safety, and it is thus natural that the arguments are also centred around this aspect of nuclear energy and not climate and environment.

To strengthen the external validity, a larger number of debates should have been analysed. This would have provided more speeches by more MEPs to the corpus, which would have let me generalize the arguments to a greater extent.

Furthermore, including a larger time frame would allow us to further understand how the debate has unfolded. However, it was deemed more beneficial to only analyse the 11-year timeframes explained above, to get a well-rounded analysis. However, this opens up an opportunity for further research; for instance how the debate has changed since the 1980s, when climate change entered the EU's agenda.

4.5.2 Internal validity

In order to determine the thesis' internal validity, it is necessary to address what has stood in the way of accurately measuring whether the framing of nuclear energy has evolved over time, and who is arguing that nuclear energy is green. An issue affecting the internal validity is that some MEPs were vague in their statements, and their stance on nuclear energy was thus not always clear. This may be affected by the limited speaking time each speaker has. However, this meant that I had to read between the lines, and interpret the argument based on the present passage. It must thus be noted that mistakes in the coding may be present, and that the true

meaning of the argument was not caught. The internal validity could also be improved by including a larger number of debates.

There is a language barrier, as most of the MEPs speak languages unknown to me. In the first debate on lessons learned from Fukushima, the transcription of the debate was already translated into English. For the other debates, the speeches that were not in a language understood by the coder had to be translated with an online translation service. Some of the points in the speeches may therefore have got lost in translation. I am not a native speaker of neither Dutch, German, Swedish nor Danish, so there is also the probability that some meaning has been lost in translation through human error. The use of professional translators could increase the internal validity of this point.

A fourth issue that arose is that there were a scarce number of debates that concerned nuclear energy between 2016-2021. This affects both internal and external validity. Ideally, there would be full debates on nuclear energy for each year of the time period to catch all aspects of the general debate on nuclear energy, to strengthen the internal validity. For external validity, more debates equal more speeches, which would increase the study's ability to generalise based on left-right orientation and nationality.

4.5.3 Reliability

A reliability issue that arises is related to the fact that I was the only one coder. This may lead to a subjectivity bias (Bratberg, 2021, p. 138). Despite the coder attempting to code as neutrally and unbiasedly as possible, there is likely unconscious bias. This means that the coder's comprehension of reality affects how they perceive certain situations. Therefore, the coder may code an argument as positive, while another coder would code the same argument as negative.

The subjectivity bias is also present in the choice of quotes in the next chapter. I chose the quotes that I believe capture the relevant concept the best. Another coder would possibly choose different quotes. There is also an issue of human error in the coding; with a large corpus, the coder has probably skipped certain parts in the corpus.

The use of NVivo for the coding aids in strengthening the study's reliability. NVivo counts the coded material, which reduces the probability of human error in the counting. Finally, I have attempted to provide a thorough and systematic description of the methodology, in order to increase the study's reliability.

With the background, theoretical framework and methodology out of the way, it is now suitable to introduce the findings, and the discussion of these findings.

5.0 Analysis & Discussion

This chapter will cover the findings in the empirical material, expectation by expectation. The chapter will first cover the green development over time, followed by left-right. Thereafter, the national expectations will be covered: Member states with nuclear energy in the domestic energy mix and dependence on Russian gas. The second part of the chapter will discuss these findings and tie them to the literature presented in the background chapter.

There are graphs under each expectation to visualize the distribution of frames used by the MEPs. However, it should be noted that these graphs are superficial, and are there to acquire an overview of the frames the different MEPs use. It is thus easier to identify which cases are worth a closer look. I also combined the party groups with the same ideologies. The party group formerly known as ALDE is now Renew. The Eurosceptic right-wing party groups, EFD and ID are also combined to one bloc. This makes it easier to follow the analysis, because there is then only one ideological bloc to follow, rather than several party groups. How the different MEPs argue, which is the purpose of this thesis, is analysed in the naming, selecting and categorizing sections.

5.1 Development over time

Expectation

The first expectation is that nuclear energy will become greener over time. In 2011, after the Fukushima accident, the powerplant safety frame will be dominating. Over time, the green frame will take over as the most dominant frame, to the point where nuclear energy is included in the taxonomy.

Model 8: Low emission by year of speech
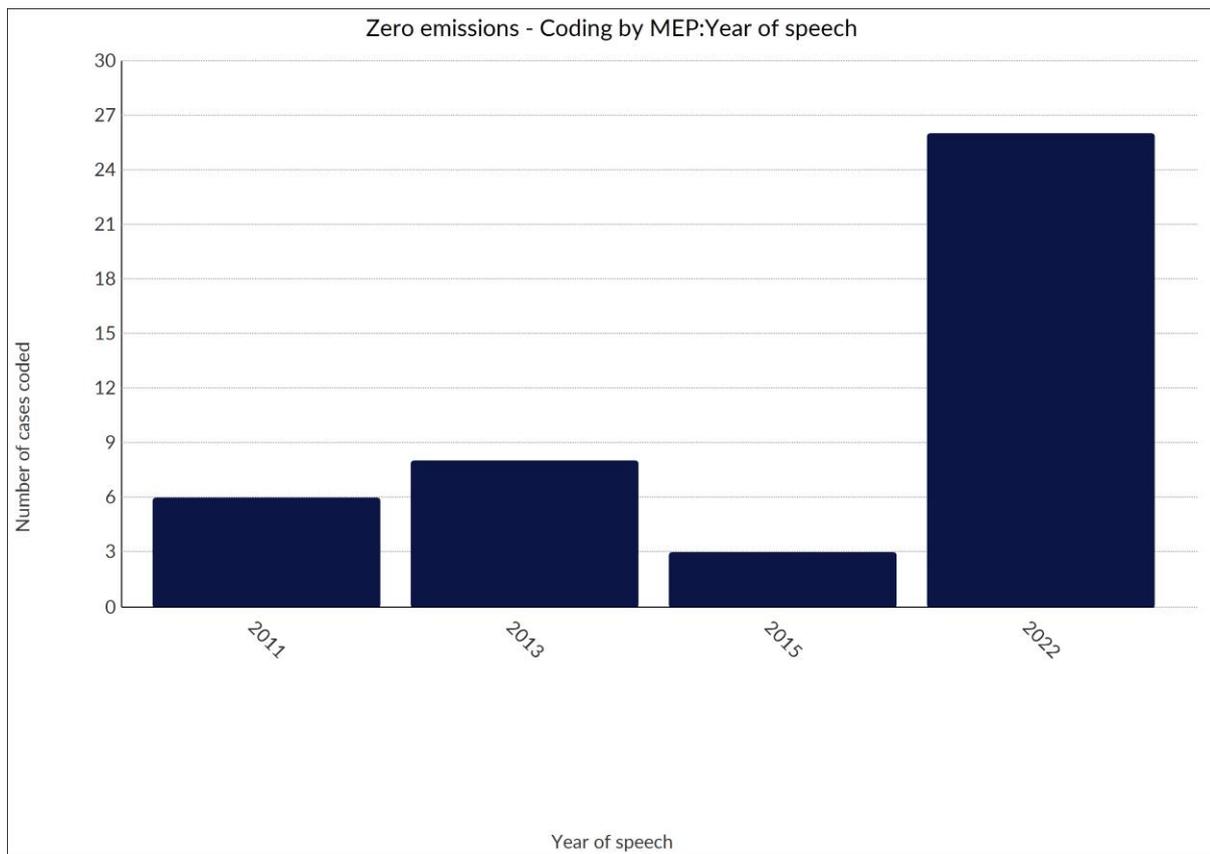
Model 8 shows the number of times the low emission frame was used in the different years. This frame is used significantly more in 2022 than in the previous year. Fewer MEPs are using this frame in 2015 than in 2011 and 2015. This is surprising, as the expectation is that nuclear energy will get greener over time. This might, however, be attributed to the fact that there are significantly fewer speeches in 2015 than in other years and should thus be taken with a pinch of salt.

However, it is necessary to see these numbers in relation to other frames, in order to gain an understanding of which frames are the most dominant in each year. It should be noted that the debate in 2022 was on whether or not nuclear energy is green, and the MEPs use the green frame to express their support for nuclear energy because of the nature of the debate.

Model 9: Frames distributed by year

Coding by MEP:Year of speech
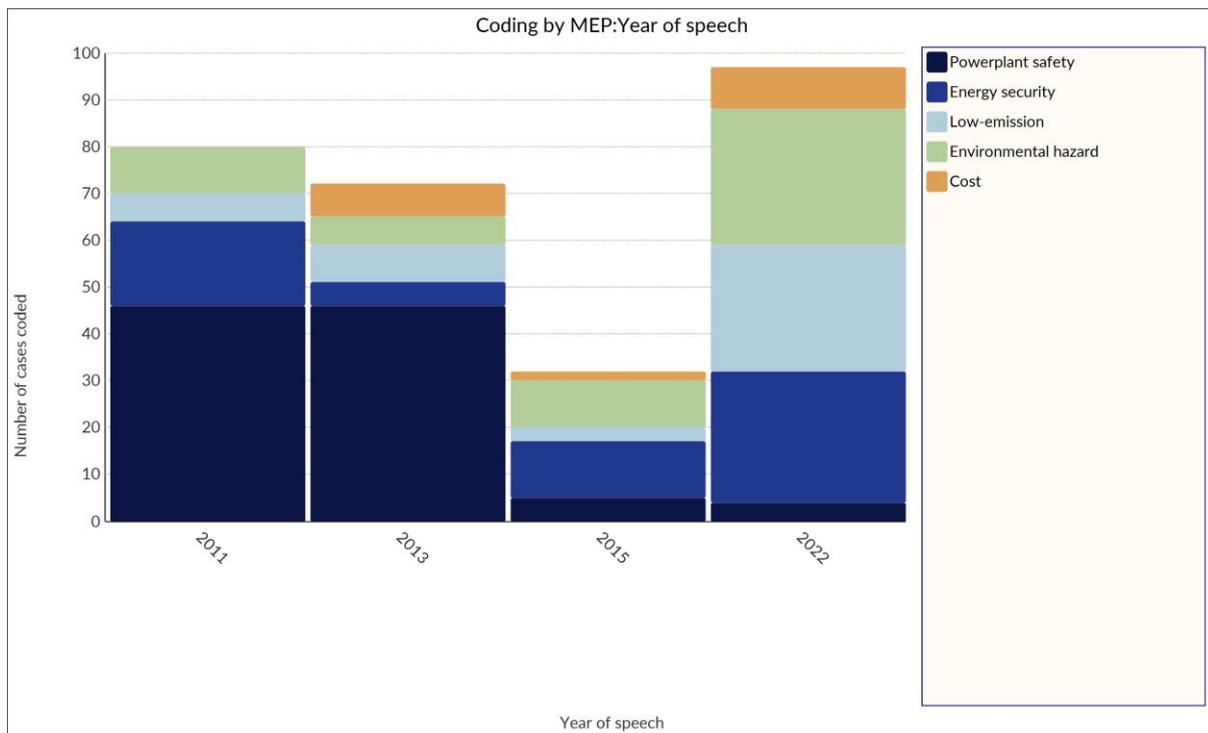
As shown in Model 9, the low-emission frame has gained more leverage over the years. We see that the powerplant safety frame was dominating in both 2011 and 2013. This is natural due to the Fukushima disaster. It is, however, possible to already catch a glimpse of the environment in speeches in 2011, as well as in 2013. There are barely any mentions of nuclear energy as green in 2015, but the environmental hazard frame is more used than powerplant safety in 2015. In 2022, the frames of low emission, environmental hazard and energy security are all widely used. This suggests that nuclear energy indeed has become greener since Fukushima.

In the following sections, the chapter will cover naming, selecting and categorizing for the environmental frames, in order to explore how the MEPs are framing nuclear energy as green.

Naming

The MEPs arguing in favour of nuclear energy will call nuclear energy a variation of "the energy of the future". When talking about the future, this would refer to low-emission energy sources. We see this type of naming in all four years.

> "[…] nuclear power is the energy of the present and the future; it is cleaner in terms of greenhouse gas emission, and more efficient and more sustainable than any other prominent energy source. It is crucial that we recognise the potential of nuclear energy. It is also crucial that we do so cautiously. Stress tests on nuclear powerplants are very necessary to ensure the safe production of this form of energy […]" [7].

In this quote from 2013, it is clear that "energy of the future" refers to the potential climate benefits of nuclear energy, albeit with safety conditions. There seems to be an overall

Another use of naming is the labelling of nuclear energy as "environmentally friendly"., which suggests that nuclear energy has a low environmental impact. This can also be used as categorizing; calling something environmentally friendly means that it is not "environmentally unfriendly", or harmful to the environment.

> "[Nuclear energy and gas] are environmentally friendly technologies that can be used to generate large amounts of cheap, emission-free electricity, ensuring the sustainability of Member States' measures to reduce rents" [8].

The perhaps most evident use of naming is seen in 2022, with the use of "greenwashing" by the opponents of nuclear energy. Greenwashing is often used when accusing businesses of advertising themselves as environmentally friendly, while they in reality take scarce measures to reduce their environmental impact (de Freitas Netto et al., 2020). In the debate on nuclear energy in the EU, the MEPs using this form of naming arguably accuse the Commission of deviating from its environmental responsibility by labelling nuclear energy green, when the MEP is of the perception that nuclear energy is not green.

> "We're not voting on whether nuclear and gas should be part of the energy transition. We're voting on whether we want to greenwash them, categorise them as green at the same level as renewables" [9].

This quote suggests that the MEPs using "greenwashing" are not necessarily against nuclear energy, but they are against nuclear energy as green in the taxonomy. The MEP is still clear that nuclear energy cannot be dubbed environmentally friendly to the same degree as traditional renewable energy sources, such as sun and wind power. This does not mean that they cannot

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[7] Charles Tannock, ECR, United Kingdom, 2013.
[8] Edina Toth, NI, Hungary, 2022. Translated from Hungarian by DeepL.
[9] Mick Wallace, GUE/NGL, Ireland 2022.

be used at all, or that the MEP is fully against nuclear energy. This may also be used as a form of selecting, which will be covered in the next section.

> "The truth is that, in this context, you are conducting a shameful greenwashing operation by classifying nuclear […] as green energy." [10].

We also see the use of naming on the other side, through the low-emission frame.

> "Meanwhile, the green fanatism, where nuclear energy is diabolized, has delivered this result: The Belgian prime minister must beg ENGIE to keep powerplants open. […] The Netherlands is using more coal plants, and in Germany, the government is going to burn a lot of brown coal. Brown coal! Soon we will maybe have to burn dried cow feces"[11].

In this quote, the MEPs is using naming by saying "green fanatism". This refers to the belief that the opponents of the complimentary climate delegated act are against the labelling of nuclear energy as green when the MEP believes that the alternative is to move towards energy sources that arguably are more polluting than nuclear energy.

Selecting

This section seeks to understand how the selecting has evolved over time; If the MEPs are selecting to focus on different areas in the main frames from 2011 to 2022.

The use of selecting is particularly interesting in 2011, after the Fukushima disaster. Nearly everyone is selecting to speak about powerplant safety, which is natural considering that the context of the debate is the accident in Fukushima. Furthermore, one could assume that speeches talking about other topics than powerplant safety would possibly be poorly received.

However, the powerplant safety frame is used differently depending on who is speaking. The MEPs arguing in favour of nuclear energy are often implicitly supporting nuclear energy, but emphasizing that all options need to be weighed carefully. This should be seen in context with several countries reviewing their nuclear energy policy after Fukushima (Bernardi et al., 2018). In the debates, the supporters of nuclear energy use a variety of "we should not make hasty decisions". This is used in combination with a powerplant safety frame and energy security

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[10] Manon Aubry, GUE/NGL, 2022. Translation from French by DeepL
[11] Filip de Man, ID, Belgium, 2022. My translation from Dutch.

frame. In the same sense, we see that supporters of nuclear energy emphasize that each member state is responsible for its energy mix.

> "[…] we must avoid the pitfall of making emotional and unfounded decisions about whether to keep or abandon nuclear energy. The decision about the composition of the energy mix must remain under Member States' jurisdiction, while the European Union's role must be to ensure that the highest safety standards are applied" [12].

We observe the use of selecting in this quote, with the MEP not explicitly saying that he is in favour of nuclear energy, by focusing on energy security and powerplant safety instead. The statement that the energy mix should be under each member state's jurisdiction sets a precedent that nuclear energy should not be phased out on a European level. This is a way of implicitly expressing support for nuclear energy. After a serious nuclear accident like Fukushima, it is likely important for the supporters of nuclear energy to stay humble, and not cause distrust in themselves by neglecting the possible harmful potential of nuclear energy. This is also where the powerplant safety frame is applied; nuclear energy has a place in the energy mix of the member states, however, the strictest safety measures should be in place.

We also see that supporters of nuclear energy will argue that nuclear energy is a necessity.

> "Nuclear energy is a resource which the global economy cannot do without in the long term. We must not come to the conclusion of rejecting nuclear energy just because dangerous accidents occur affecting the operation of nuclear powerplants. The solution is for us to assign more resources to research in this area and to improve nuclear technology so that we can reduce the risks caused by accidents" [13].

In the above quote, the MEP selects to use the economic frame to imply that closing down powerplant is not an option. He appeals to the powerplant safety frame to express that the right move forward is to delegate more resources to the area to secure the safe operation of powerplants.

Meanwhile, MEPs opposing nuclear energy will use a different kind of selecting. They will explicitly state the reasons as to why they perceive nuclear energy as an environmental hazard.

> "[…] A nuclear accident is not a linear event; the consequences ripple outwards like the radioactivity which is still discharging into the sea. It is therefore vital that the proposed

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[12] Ioan Enicu, S&D, Romania, 2011.
[13] Theodor Dumitru Stolojan, PPE, Romania, 2011

stress tests take into account the multiple, complex, geometric consequences of a disaster event. Commissioner, as you say, Member States have the right to decide their energy mix, but you have the responsibility for nuclear safety. Do you agree that Member States should impose a moratorium on the planning and commissioning of new nuclear plants? What will you be proposing to make sure that governments and investors focus instead, now, on how to get a greater commitment to energy efficiency and renewables?" [14].

The powerplant safety frame is used in combination with the environmental hazard frame. There is a focus on nuclear accidents arguably having a negative impact on the environment.

Meanwhile, in 2013 the selecting is utilized differently. This is where the cost-frame is utilized in combination with the powerplant security frame by supporters of nuclear energy. The assumption that nuclear energy is here to stay is more apparent than in 2011, but the question arises is who is footing the bill of powerplant safety measures. There is an underlying assumption that nuclear energy is necessary, but the necessary safety measures have to be present.

"I voted in favour of the report which aims to guarantee and improve safety in nuclear power stations in Europe. The text adopted is ambitious and binding. Once the stress test has been carried out, the Member States will have to implement the recommended improvements. However, I voted against the fact that nuclear power operators must bear the full cost of any measures. This obligation is too indiscriminate and exclusive"[15].

The above quote shows that powerplant safety is important for the continuing of the powerplant. The speech gives the impression that the MEP assumes that nuclear energy is there to stay, and that the main issue is who is going to pay for the safety measures.

We see a similar approach to the MEPs negative towards nuclear energy. The MEPs negative towards nuclear energy are not as absolute in calling for the closure of powerplants, but rather recognize that nuclear energy is not going to be phased out any time soon. However, the condition for the continuation of nuclear energy is that the powerplants are safe.

"We oppose the development of nuclear energy but leave the final decisions to the Member States. We believe that a possible 'yes' to nuclear power must be accompanied

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[14] Fiona Hall, ALDE, UK, 2011.
[15] Philippe Boulland, PPE, France, 2013. Translated from French by DeepL

by a significant number of regulations protecting the environment and people from the negative impacts of nuclear powerplants"[16].

In the above quote, the MEP implies that although he is negative towards expanding nuclear programs, member states should still be able to use nuclear energy as long as the safety measures are in place. He is using both the environmental hazard frame in combination with the powerplant safety frame.

"I voted in favour of this resolution because it improves the safety test conditions to which European nuclear powerplants are subject. Our group has maintained a firm position against the use of this type of energy for years, but this report improves the safety conditions to which the plants currently in operation must respond. The results of these stress tests must be used to force the plants to implement improved safety measures, increasing the cost of producing this type of energy in order to make the national energy systems realise the true economic cost of using this type of energy.

If the safety measures required by the results of the stress tests are implemented, nuclear powerplants will become less profitable and less attractive to private investment. That is why I voted in favour of this resolution, even though it does not call for the closure of any powerplant"[17].

The powerplant safety frame is strong in this passage, and the MEP supports the closure of powerplants. The argumentation is interesting: the logic suggests that if the safety measures are more expensive, then it is also less likely that private investors will put money into nuclear energy. This should eventually lead to a phase-out of the energy source all together.

In 2015 we see a transition from powerplant safety to the environmental aspects. The topic of this debate is the Energy Union, which means that most of the MEPs in this debate do not devote their speaking time to nuclear energy. However, for the MEPs that do, it sends a signal that nuclear energy is of high salience to these MEPs. This is the case for both the supporters and opponents of nuclear energy.

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[16] Zbigniew Ziobro, EFD, Poland, 2013. Translated from Polish by DeepL
[17] Willy Meyer, GUE/NGL, Spain, 2013. Translated from Spanish by DeepL

"Nuclear energy, which has low carbon dioxide emissions, continues to make a significant contribution to the EU's domestic energy production. I believe that the choice to use nuclear energy should remain the responsibility of the Member States."[18]

We see that this MEP is using low-emission as a bi-frame to the energy security frame. Because the MEP is selecting to spend his limited speaking time expressing the importance of nuclear energy, it is reasonable to assume that he believes that nuclear energy is an important energy source. It should be noted that the MEP is from the Verts/ALE group, which is not expected to frame nuclear so positively. It may, though, be because he is Slovenian; Slovenia is a country with nuclear energy.

Meanwhile, in 2022, the MEPs select to speak about the environmental aspects, likely because the topic of the debate is whether nuclear energy should be considered green in the taxonomy.

"If we now keep natural gas and nuclear energy out of the EU taxonomy for sustainable financial activities, what does it express? That we, who only two years ago passed the world's most ambitious climate law ago on behalf of the voters, are now pushing the goal of climate neutrality far into the future – far beyond 2055 as promised! Then we are also those, who despite better and scientific knowledge, tie the EU to coal and oil for longer than what is good and possible."[19]

This MEP believes that nuclear energy should be used because it is cleaner than the alternative. If nuclear energy is not included in the taxonomy, it gives member states an incentive to keep using coal and oil, which arguably is more polluting than nuclear energy, inhibiting the EU reaching its ambitious climate goals.

Many MEPs claim that the debate is not about whether or not nuclear energy should be used, but whether or not it should be considered sustainable. They then state that nuclear energy should not be considered green in the taxonomy. This is a kind of selecting, where the MEPs are not clearly stating that they are against nuclear energy. This may be because of the current energy crisis, and it may thus be difficult for MEPs to speak against a type of energy that many Europeans rely on.

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[18] Branislav Skripek, Verts/ALE, 2015, Slovenia. Translated from Slovenian by DeepL.
[19] Pernille Weiss, PPE, Denmark, 2022. My translation from Danish.

Categorizing

The climate-friendly aspect of nuclear energy is shining through already in 2011 if we examine how MEPs use categorizing in their speeches. MEPs that use the environmental hazard frame may use the word "unsustainable" when talking about nuclear energy. This suggests that the MEP is leaving nuclear energy out of the category "sustainable".

> "Yes, we must phase out nuclear power – that is clear. However, it is impossible to do this overnight. In Belgium alone, 55% of our electricity comes from nuclear energy. How would we heat, feed and provide light for ourselves if we decided to close all our power stations tomorrow? That is why we must act on two levels.
>
> Firstly, we must increase the safety standards of the existing power stations, in particular, using the stress tests that are currently carried out in the Member States. As well as the essential harmonisation of these tests at European level, we must be as transparent as possible with the population. We must restore confidence in our nuclear power.
>
> Secondly, we must intensify our research and innovation to develop solutions as quickly as possible that will allow us to save energy and to promote sustainable and effective renewable energies. The least expensive, least polluting and least dangerous energy is unconsumed energy. These efforts make it necessary, from today, to have a binding regulation and massive investments at European level and in the Member States."[20]

In this quote from 2011, the MEP is talking about "sustainable and renewable energies" when talking about what should replace nuclear energy. This suggests that nuclear energy is not considered a sustainable energy source. There is still focus of keeping nuclear energy as a transitional energy source, and powerplant safety.

In 2022, we witness MEPs saying straight out that nuclear energy is not a sustainable energy source.

"Mr President, Commissioner, ladies and gentlemen, we cannot accept the diversion of green investments into unsustainable energy sources that also benefit Putin's war."[21]

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[20] Marc Tarabella, S&D, Belgium, 2011.
[21] Tilly Metz, Verts/ALE, Luxembourg, 2022. Translated from French by DeepL.

"While I am sure that gas and nuclear have a role in the transition, I cannot identify these as sustainable. I genuinely fear for the diversion of investment away from renewables." [22]

This sort of framing is the most visible in 2022, arguably because the topic of the debate. The MEPs are saying straight out that nuclear energy is not sustainable. This suggests a competition between the low-emission frame and environmental hazard frame in 2022.

Summary

As expected, powerplant safety is the dominating frame in 2011, after the Fukushima incident. We can already catch a glimpse of the green frame in 2011, however, this frame falls in the shade of the energy security frame. It should still be noted that the non-environmental frame of nuclear energy is often used by the opposers of nuclear energy. We observe the use of selecting amongst several supporters of nuclear energy; instead of explicitly voicing their support to nuclear energy, they imply it through appealing to energy security or increased powerplant safety measures. This also implies that the frame of nuclear energy as green is scarcely used in the aftermath of the Fukushima accident. For the supporters of nuclear energy, safer nuclear energy is deemed necessary to keep the nuclear powerplants in operation. This is a possible reason why the focus is set on safety, rather than energy security or climate. On the other hand, it is also more difficult to distinguish who is positive and who is negative towards nuclear energy.

In 2013, the focus is still on powerplant safety. However, it seems to be more appropriate to argue in favour of nuclear energy despite using this frame. The powerplant safety frame is often used in combination with cost. This means that the focus is on powerplant safety, however, the question is how the new safety measures will be funded.

From 2011 to 2022, we see that there is a shift from the powerplant safety frames that were dominating in 2013, to a larger focus on the environmental frames: low emission and environmental hazard. There are not many MEPs framing nuclear energy as a low emission energy source in 2015, however, the use of the environmental hazard frame suggests a larger focus on the environmental aspects of nuclear energy. In 2015, we see a shift towards the environmental arguments, and powerplant safety does not possess the same focus as it did in the immediate years after Fukushima. Meanwhile, in 2022, energy security, low emission and environmental hazard are all dominating frames.

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[22] Barry Andrews, Renew, Ireland, 2022.

We can therefore conclude from this study that nuclear energy has indeed become greener over time. The argument of nuclear energy as a low emission energy source is used to a larger degree in 2022 than in the other years; the use of "greenwashing" as naming is an indicator for this. At the same time, we also see an increase in the environmental hazard frame, starting in 2015. This suggests that environmental aspects have gained a larger role in the EP. However, when diving deeper into the debates, we find that the low emission frame is often used along with the energy security frame. This is also because some MEPs want to frame nuclear energy as green. This may be tied to the literature on the crossroad between the climate, environmental and energy policy, and will be discussed further in the discussion section.

Taken together, this supports the hypothesis that nuclear energy has become greener over time.

5.2 Left-Right

The second expectation is that there is a left-right divide in how the MEPs will argue. I expect the right to frame nuclear energy as a low-emission energy source, while the left will use alternative frames. As mentioned earlier, this cleavage is included as the literature shows that the left-right cleavage is often a good predictor of how MEPs will argue (Hix & Høyland, 2022, p. 69).

To gain an overview of which MEPs use the low-emission frame, it is valuable to use a graph to visualize how the speeches framing nuclear energy as a low-emission energy source are distributed among the party groups.

Model 10: Low-emission by party group

Low-emission - Coding by MEP:EP Party Group
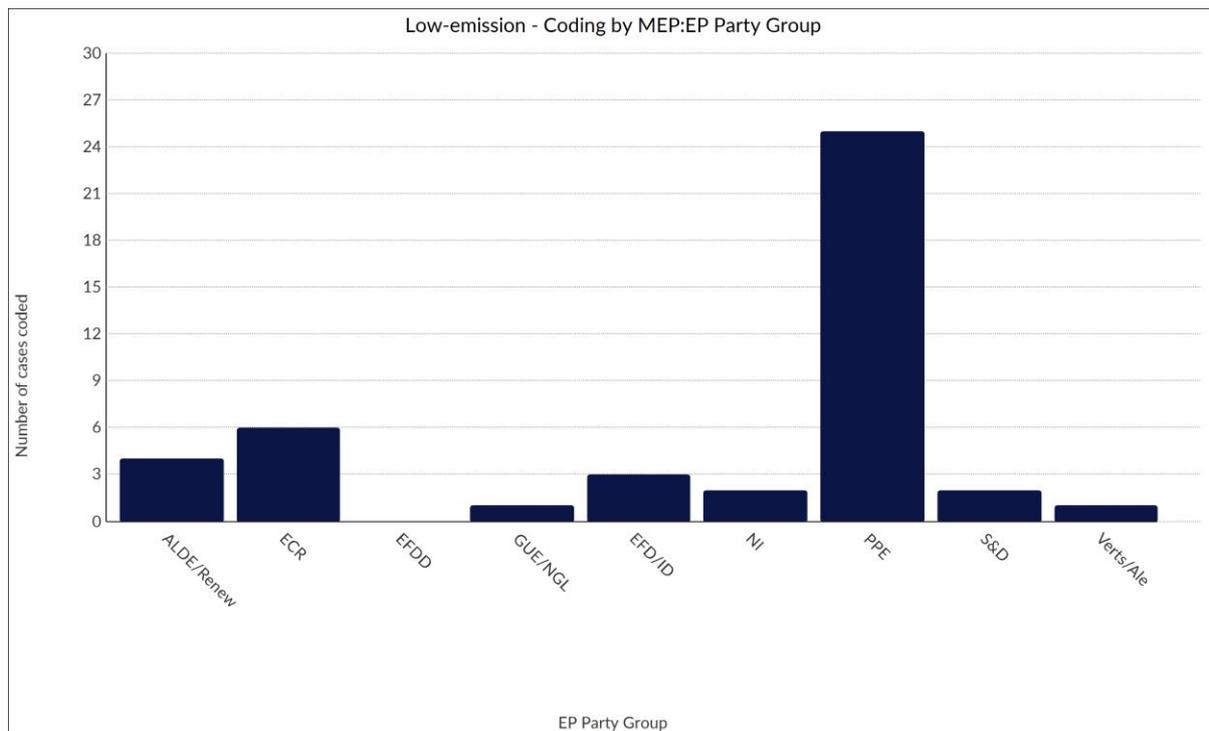
As shown in Model 10, there are mostly MEPs from the PPE group that uses the zero emissions frame the most. This is also the largest party group in the EP, and also the group with the most speeches in the corpus. At the same time approximately half of the members from ECR, ID and Renew Europe groups frame nuclear energy as green. From the parties on the left, hardly anyone frames nuclear energy as green. Pay particular attention to the S&D group. This is the second largest group in the EP, as well as the group with the second most speeches in this analysis. There is still only one S&D speech that uses the low-emission frame. This implies a division between left and right; the centre-right to right-wing are mainly the ones utilizing the low emission frame. This is in line with the hypothesis that there is a left-right cleavage between in the framing of nuclear energy as green.

It is nevertheless interesting to explore which frames are dominant across the political spectrum, to find out which frames are dominating within the party groups.

Model 11: Frames by party group

Coding by MEP:EP Party Group
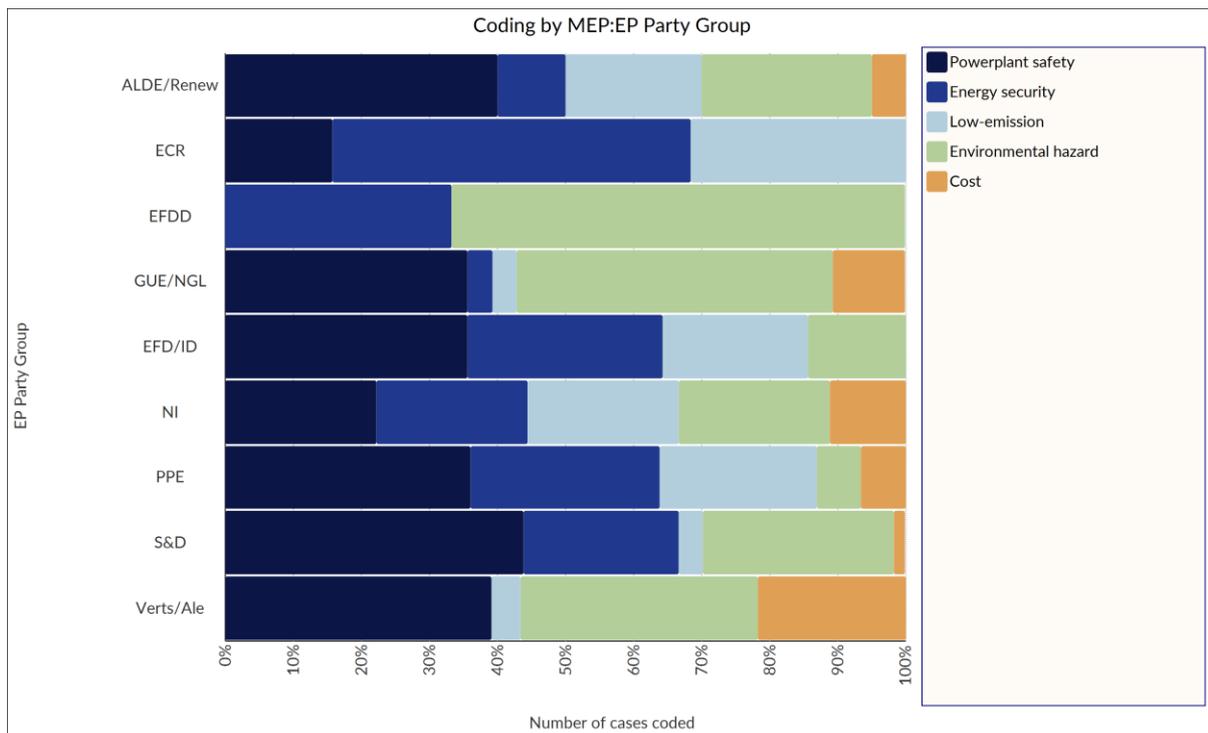
Model 11 shows the distribution of frames in the different party groups. Despite there being the most MEPs from the PPE group using the low emission frame, low-emission falls in the shade of energy security and powerplant safety. However, despite the low-emission frame not necessarily being the dominant frame, it is still clear that it is mainly the MEPs from the centre to the right side of the political spectrum that argue that nuclear energy is green. One may see that there is a divide right on the centre, as the ALDE/Renew group has MEPs on both sides of the green competing frames. This suggests that the group is split on whether nuclear energy may be framed as green or not.

Because of the large difference between the use of the low emission frame, it makes more sense to further examine the arguing within the party groups, rather than across the party groups.

Naming

We see the Eurosceptic conservatives in the ECR group name nuclear energy the "energy of the future".

> "I am extremely proud that in my region we have just opened the planning process for the next generation of nuclear power. It is the power of the future, but it is also important

> that we learn the lessons of the past and look at past accidents and try and make sure that they do not happen again." [23].

Again, "power of the future" refers to nuclear energy as a climate friendly energy, which ought to supply the EU with energy for the unforeseeable future.

We also see the use of "environmentally friendly" used by the right.

> "Nuclear power, on the other hand, is a virtually emission-free and environmentally friendly technology just like renewable technologies" [24].

If we take another look at the use of "greenwashing", it is almost exclusively used by MEPs from the GUE/NGL group. It is also found in the S&D group and Renew Europe. Both GUE/NGL and S&D are on the left side of the political spectrum, while Renew Europe is in the centre. This further emphasizes the understanding of nuclear energy as not green on the left.

> "My view is based on issues of long-term cost both to people and planet and the fact that it is impossible for us to accurately estimate the cost of nuclear decommissioning, or storage of radioactive and other toxic waste. Transport of raw, processed and spent nuclear fuel is also a financial and environmental burden"[25].

This MEP used naming by calling the transportation of nuclear fuel a "financial and environmental burden", which is an example of both the cost and environmental hazard frames.

Selecting

Next up is selecting as a framing tool, which concerns the topics of which the MEPs choose to focus on. It is worth noticing the use of the environmental hazard-frame, as this suggests an increased focus on the environmental aspect of nuclear energy, and the crossover between environmental and energy policy.

We observe that the PPE group has used the low emission frame since 2011, through selecting.

> "A further important question is what effects a possible strategic shift would have on the gas markets, gas supply security and the EU's carbon dioxide emission reduction targets. Finally, I welcome the quick reaction of the European Commission and the

[23] Vicky Ford, ECR, United Kingdom, 2013
[24] Elzbieta Kruk, ECR, Poland 2022. Translated from Polish by DeepL.
[25] Julie Ward, S&D, United Kingdom, 2015

announcement that European nuclear powerplants will be subjected to stress tests. The most important question, however, is what further measures Europe plans in order to guarantee the safety of nuclear energy production"[26].

"The European Parliament's position that nuclear energy remains an important source of energy that reduces CO_2 emissions obliges the EU to pay particularly close attention to nuclear safety"[27].

The observation that this group has used the low-emission frame over such a long time period suggests that the low-emission frame holds a solid position in the party group.

For selecting, we observe the use of ideology, which captures that there is a known split between the party groups.

"[…], you belong to the Group of the Greens/European Free Alliance and I believe that we have in common the desire to combat the climate crisis. How do you respond to the fact that nuclear power emits half as much CO_2 as wind power and ten times less than solar power, and how do you respond to the IPCC, which says that we will not be able to solve the climate challenge before us if we do not work with nuclear power, which is currently the most decarbonised energy that European countries can use to face this challenge and preserve our energy model?"[28].

The ideological feud is visible with this blue-card question and pushes forward the division between the left/green and the right. The MEP is criticizing the MEP representing Verts/ALE for not considering nuclear energy green, when it is a low-emission energy source, which arguably is necessary for a green energy transition. It implies a different understanding of "green". In this MEPs' opinion, the focus is on the carbon emissions of powerplants.

If we look at the answer to this blue card question, the divide between the left/greens and the right becomes more obvious:

"Firstly, this instrument, this taxonomy, does not prohibit nuclear power. Secondly, we all agree that nuclear energy is not green and increases our dependence on imported uranium. I don't think there is any uranium in France, so it leads to massive imports. We know very well that building nuclear reactors takes many years, so it will not meet the

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[26] Andras Gyürk, PPE, Hungary, 2011
[27] Radvile Morkunaite-Mikuleniene, PPE, Lithuania, 2013. Translated from Lithuanian by DeepL
[28] Francois-Xavier Bellamy, blue card question, PPE, France, 2022. Translated from French by DeepL.

climate objectives at all. By the time they are operational, we will have passed the dates by which the climate objectives must be met. And thirdly, you know very well that nuclear waste, for which there is still no solution, has to be cooled for 80 years. So this is not sustainable or environmentally friendly either. After all, how do you cool the waste if not with cold water, which also harms biodiversity?" [29] .

The understanding of the term "green" is visible in the final paragraph. The MEP uses categorizing to imply that nuclear energy is unsustainable and environmentally unfriendly. The reasoning is that there is no solution for nuclear waste and the amount of cold water it takes to cool down the waste. There is thus the implication that the term "sustainable" goes beyond zero emissions, to environmental impact.

"[..] the vote we are about to take is the clearest proof yet of the hypocrisy, ideological extremism and technological ignorance that arm the environmentalism of the Left." [30]

"For anyone asking themselves what is worse than "stupid", the answer is "green"! Even worse is that the socialists, Christian democrats and the liberals are also complicit in this insanity. Hopefully the coming winters will not be too harsh, because then it will be hurtfully obvious to the public how disastrous this policy has become up until now" [31].

This extract demonstrates how the MEP understands the ideological divides; the Greens are setting energy security up for failure, with the help of the socialists, Christian democrat and liberals. However, it also picks up the essence of the belief that energy security is higher up on the agenda than the environment.

One the other side, from the Verts/ALE group, the green group, we observe that traditional renewables are more favourable than the use of nuclear energy.

"The use of renewable energy sources promotes decentralisation, better regulatory frameworks and self-consumption, with a view to improving energy security. Yet the EU is still not completely divesting from nuclear energy. It is true that nuclear

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[29] Tilly Metz, Verts/ALE, Luxembourg, 2022. Translation from French by DeepL.
[30] Nicola Procaccini, ECR, 2022. Translated from Italian by DeepL.
[31] Filip de Man, ID, 2022, Belgium. My translation from Dutch.

powerplants still account for a large share of total energy consumption, but with a well-designed plan this could change"[32].

This speech recognizes that nuclear energy still is important for energy security, however, it is also of the opinion that traditional renewables also have the prospect of securing energy supply.

Categorizing

Moving on to categorizing, it makes sense to look closer at who is using the categorizing that is mentioned in the previous part on development over time.

We can see categorizing of nuclear energy as "unsustainable" among the Verts/ALE group.

> "Nuclear energy and fossil energy are not sustainable. Every Euro spent on power and gas strengthens structures we do not want in the long term, keeps us from sun, wind and water "[33].

Firstly, we see that nuclear energy is categorized as unsustainable. More importantly, the MEP is using the environmental hazard frame in combination with the cost frame. This implies that the investment in allegedly unsustainable energy sources, such as nuclear energy, is at the expense of renewable energy sources, and this is why nuclear energy should not be labelled green in the taxonomy.

We also see the categorizing of nuclear energy as unsustainable in the S&D and GUE/NGL groups:

> "This delegated act, in addition to not respecting the scope of the regulation, as already explained in the speeches that preceded me, sends the wrong message to investors and European citizens because it labels as green what is not green, discrediting the entire regulation, because an energy source that is a fossil fuel, such as gas, or a source, such as nuclear, whose production waste takes thousands of years to dispose of, in defiance of the principle of not causing significant damage, cannot be considered sustainable. We are well aware of the role of nuclear and gas in the next few years in ensuring security of supply, but the choices on the energy mix of Member States are not at issue here, and excluding gas and nuclear from the taxonomy of investments that want to

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[32] Igor Soltes, Verts/ALE, Slovenia. 2015. Translated from Slovenian by DeepL.
[33] Henrike Hahn, Verts/ALE, Germany, 2022. My translation from German

qualify as green does not prohibit these sectors from obtaining public and private funding anyway […]" [34].

The MEP claims that nuclear energy cannot be labelled sustainable because the nuclear waste allegedly is against the "no significant harm"-principle. She is also emphasizing that even if nuclear energy is not included in the taxonomy does not stop the usage of nuclear energy in domestic energy mixes. This may also be a kind of selecting; emphasizing that excluding nuclear energy from the taxonomy will not strip the member states from being in charge of their energy mix.

> "[…] the delegated act to arbitrarily baptise fossil gas and nuclear power 'green' is perhaps the Commission's worst moment yet. It would terminally traumatise the integrity of the taxonomy by dynamiting its scientific foundation and destroy the Union's climate action credibility by sticking to the murderous fallacy of bending science to the experiences of markets, of expecting the earth system to enter into political compromises, of treating the climate emergency with 'business as usual' […]" [35].

This MEP from GUE/NGL also categorizes nuclear energy as "not-green". He supports this by claiming that this would decrease the legitimacy of the taxonomy, and trivialize what he calls "the   climate   emergency".

Summary

We observe a clear left-right divide, where the left is mainly using the environmental hazard frame, and the right is using the low emission frame. It is, however, interesting how the frames concerning climate and environment are portrayed so differently between left and right. This implies that the left and right have different understandings of what is "green", whereas the right understands "green energy" as low-emission energy sources. Meanwhile, the left understands "green energy" from a more environmental perspective, where the focus is on waste management and the impact the energy source has on the environment.

5.3 Energy mix

The third expectation is that MEPs from countries in Northern and Western Europe that already uses nuclear energy in their energy mix will argue that nuclear energy is green. At the same

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[34] Simona Bonafè, on behalf of S&D, Italy, 2022. Translated from Italian by DeepL
[35] Petros Kokkalis, GUE/NGL, Greece, 2022.

time, I expect countries from Eastern and Southern Europe to use energy security as their dominant frame. Here it is again suitable to refer to the graph of the use of the low emissions frame by country:

Model 12: Low-emission by member state – member states with nuclear energy
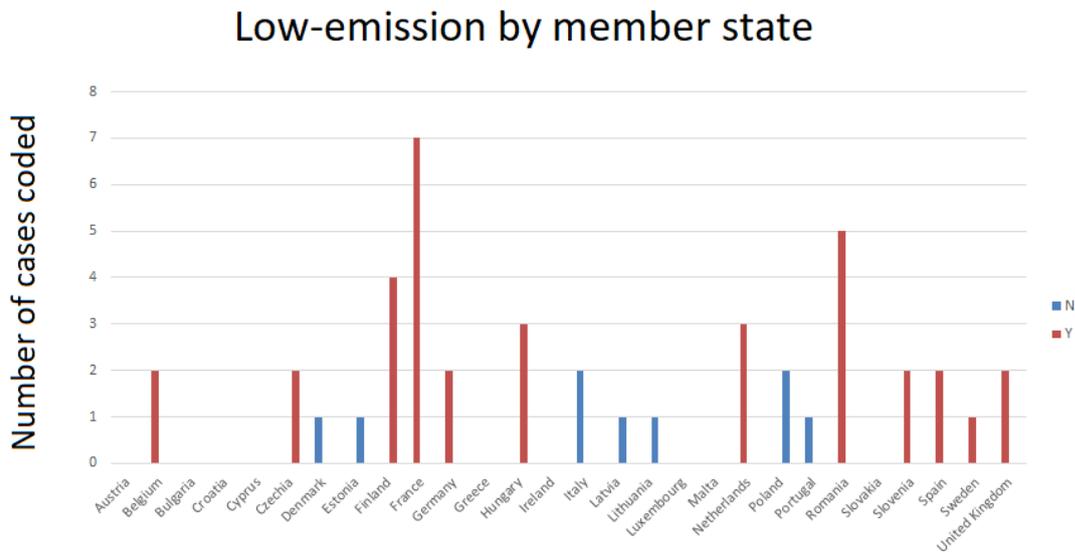
Model 12 visualizes the countries that had nuclear powerplants in 2022 are red, while the countries without nuclear energy are blue. Although Germany closed down its final nuclear powerplant in 2023, it is still reasonable to include Germany along with the countries have nuclear powerplants. This is because Germany still had powerplants in operation in 2022, when the last debate happened. The graph shows that France, Romania and Finland are the member states with nuclear energy with the most speeches that use the low emission frame. Here it is also valuable to examine the countries that produce nuclear energy, and the frames that are mainly used in these countries.

Model 13: Frames by member states with nuclear energy

Coding by MEP:Nationality
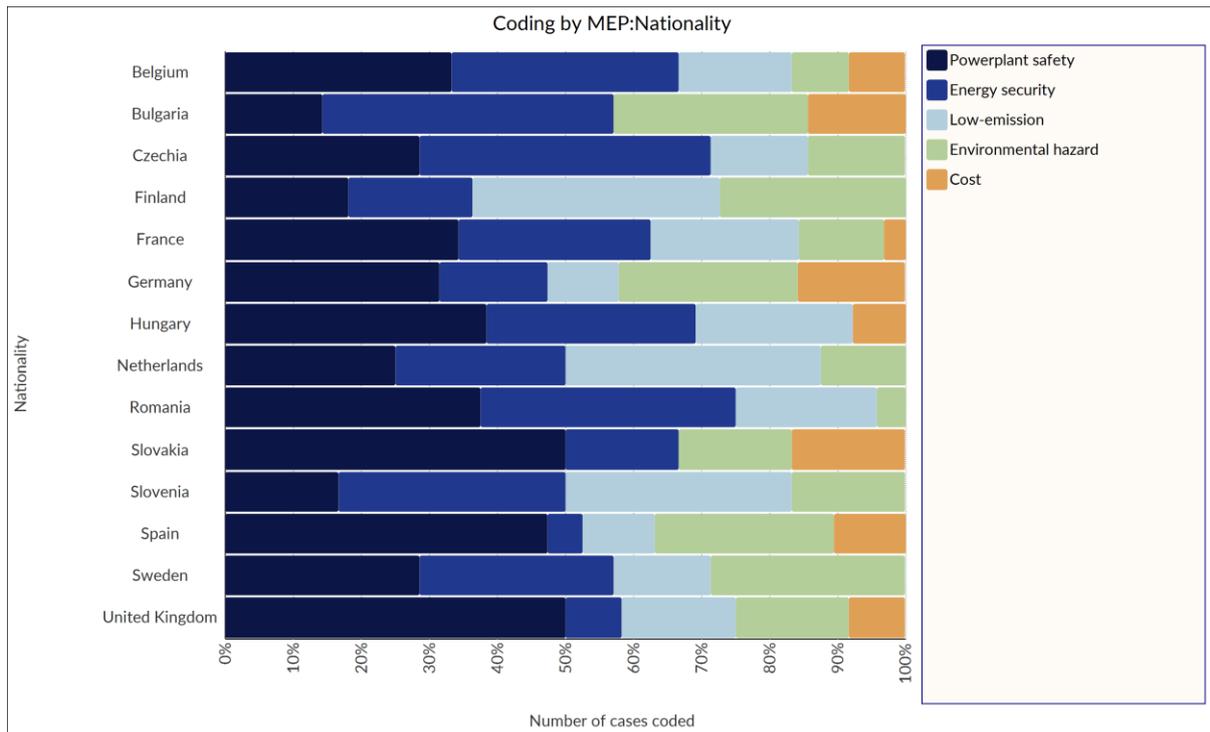
Again, when we look at the countries that produce nuclear energy, we see that a couple of MEPs from a selection of countries use the low-emission frame as one of their main frames, Finland, the Netherlands, and Slovenia. We can also observe that powerplant safety and energy security are frequently utilized, particularly in Slovenia, Romania, Bulgaria and Czechia. The Netherlands, Slovenia, and Finland stand out as countries where the environmental frames are the most frequently used.

It makes sense to have a closer look at the arguments of the countries where the low-emission frames are frequently used, in order to observe whether the MEPs from these countries use the frames similarly.

In France, there is mainly the party group PPE, as well as one MEP from ID, that use the low-emission frames. When looking closer at Sweden, we also see that all the MEPs using the environmental hazard frame are from S&D. This is in line with the debate on nuclear energy in the Swedish parliament from 2010, where there was a clear left-right divide (Edberg & Tarasova, 2016). This suggests stronger ideological than national powers that drive the debate on nuclear energy in Sweden. In Romania, the low-emission frame is used across the political spectrum.

Again, in the following section, naming, selecting and categorizing will be looked at closer in order to find patterns within the member states.

Naming

For Spain, there is a strong left side that argue against the use of nuclear energy through the powerplant safety frame. This is particularly visible in the 2015 debate, where three members of GUE/NGL hold the same speech.

> "[…] the boost given to an energy as dangerous as nuclear power in the context of the energy transition. On the contrary, there are own resources, such as coal, which can be developed as a complement to renewable energies and environmental efficiency in order to reduce our energy dependence"[36].

This speech paints nuclear energy as an unsafe energy source. The MEP recommends the use of coal instead of nuclear energy to gain energy security. This suggests that the MEP believes that the benefits of coal outweigh the benefits of nuclear energy through the belief that nuclear energy is a dangerous energy source.

> "You are going beyond your remit, Mrs McGuinness, to continue to benefit the electricity oligopoly, which will continue to plunder public funds. You defend the interests of the big energy companies and not those of the people. Perhaps that is why you hide behind a security perimeter and do not listen to the hundreds of activists who have been prevented from entering this Parliament, the seat of popular sovereignty, where the lobbyists do walk.
>
> We need to reduce consumption of fossil fuels, including gas. We need to give security and certainty to future generations. That is why nuclear energy must be abandoned. And we need this Parliament to take a courageous decision that does not jeopardise our future"[37].

This extract starts by criticizing the Commissioner for defending the interests of companies rather than the safety of the powerplants. By stating that "We need to give security and certainty to future generations", there is an assumption that nuclear energy is an unsafe energy source.

Selecting

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[36] Javier Couso Permoy, GUE/NGL, Spain, 2015. Translated from Spanish by DeepL
[37] Sira Rego, GUE/NGL, Spain, 2022. Translated from Spanish by DeepL

The French MEPs select to already speak about low emissions in 2011 and 2013.

> "[…] we are talking today about improving the safety of nuclear power, not about calling civil nuclear power into question when it is an essential component of energy independence and of the fight against greenhouse gases in many Member States of the European Union"[38].

The above quote from after Fukushima moves the focus to powerplant safety by using both the energy security frame and the low emission frame, after several MEPs called for the phase-out of nuclear energy. There is no question of whether or not nuclear energy should be utilized because of the benefits of low emission and energy security.

> "I felt that the debate had been hijacked by European Greens who launched an alarmist indictment of nuclear energy. Attacking nuclear energy in this way directly calls into question the achievement of the energy mix targets of a 20% reduction in CO_2 emissions by 2020 and could prove dangerous for the economy and research in the European Union"[39].

> "This report promotes the escalation of tensions between Russia and the European Union by pointing out that Russia cannot be a reliable partner, while Russia remains an indispensable partner in the field of energy. The report also proposed the phasing out of nuclear powerplants, an unrealistic proposal as alternative energy sources would be highly CO_2 emitting and/or would compromise European energy independence" [40].

This MEP is also using the low-emission frame in combination with the energy security frame. It is interesting that he is speaking about energy independence from Russia when France is not even highly dependent on Russian energy. This implies that the 2015 energy crisis had a large impact on which arguments were expected to have salience in the EP.

The MEPs from Romania using the low-emission frame are mainly from PPE, but there is one MEP from S&D using the same frame and thus breaking with his party group. The Romanian MEPs also use the argument of nuclear energy as a transitional fuel.

> "The vote in the European Parliament, however, clears the way for the European Commission's delegated act, whereby investments in natural gas and nuclear energy can be financed from EU funds as transitional activities to replace coal and oil. After all,

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[38] Gaston Franco, PPE, France, 2011
[39] Sophie Auconie, PPE, France, 2013. Translated from French by DeepL
[40] Marc Jouland, PPE, 2015. Translated from French by DeepL

coal mines are being reopened in the EU to cope with the energy crisis, and some people dislike gas and nuclear, which are less polluting[41].

Energy security is the main frame used in the above argument; however, the MEP uses the low-emission frame to advocate for nuclear energy instead of coal.

> "The European Commission proposes to include nuclear energy and natural gas in the EU taxonomy on sustainable financing. This step is crucial to the EU's ability to achieve its environmental objectives. Only with this addition and through new investment will the EU be ready for 'Fit for 55' […] Member States have started to move away from Russian gas, but to be able to switch away permanently, we need new investments in LPG terminals and energy infrastructure. For the transformation of industry and the energy mix, Member States need nuclear energy and natural gas, which is the transition fuel" [42].

This MEP is also of the opinion that nuclear energy needs to use nuclear energy as a transitional fuel to secure the energy supply during the green transition.

The finding that nuclear energy is framed as green on both the political left and the right suggests that there are strong national powers in favour of nuclear energy in Romania.

In the case of the Finnish MEPs, the lines between parties are more blurred. MEPs from PPE, Verts/ALE and Renew Europe use the low-emission frame.

> "Nuclear power is low-emission, although not entirely free of environmental problems, but under certain conditions it can be part of a sustainable path towards a climate-resilient Europe. To lump [gas and nuclear] together is not only intellectually dishonest but also completely illogical" [43].

The above quote frames nuclear energy as low emission and has the potential of being part of a sustainable transitions. She does, however, make it clear that there are environmental problems that follow nuclear energy, but not as severe as for other energy sources such as gas. Interestingly, the group speaker is using her speaking time to break with her party group as this is the only case found where a member of Verts/ALE is using the low-emission frame.

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[41] Mihai Tudose, S&D, 2022. Translated from Romanian by DeepL
[42] Iuliu Winkler, PPE, 2022. Translated from Romanian by DeepL
[43] Silvia Modig, on behalf of Verts/ALE, 2022

"Mr President, nuclear power is an emission-free form of energy. However, it is a matter of concern that only two countries have solved the problem of the final disposal of nuclear waste: Finland and Sweden. So, despite the risks, nuclear power is, as the Commission says, an important option in the energy transition and deserves positive treatment in the taxonomy".[44]

"[…] in order to get rid of fossil energy, Europe must invest in all low-emission energy sources, including nuclear power. Already today, half of Europe's emission-free electricity comes from nuclear power and we know that the demand for electricity will only increase in the future. It is therefore worth supporting the Commission's line here, which considers that new investments in nuclear power, as well as extensions of operating life under certain conditions, are sustainable investments. That is the right line, but I also understand very well those colleagues who are concerned about the disposal of nuclear waste in countries where it has not been resolved, and it should be resolved. In my own country, Finland, we were the first in the world to organise the disposal of nuclear waste. A decision was taken 30 years ago. Nuclear waste will be buried in the basement cavern, and that area will be put into operation in a few years' time. The Commissioner has visited the site. These solutions are needed." [45]

For Finland, we see that although MEPs argue that nuclear energy is low-emission, there are still environmental issues that follow. These issues should be solved to outweigh the potential negative consequences of nuclear energy. This is also a traditionally Northern and Western way of arguing (cf. Hix & Høyland, 2022); the focus is on the all-round environmental impact of nuclear energy, rather than only focusing the argument on energy security.

In Spain, we observe that the centre to centre-right use selecting to promote nuclear energy as green energy source.

"I'm afraid, Commissioner McGuinness, that many of my colleagues in this Chamber believe in what in my primary school, in your primary school would have been called the Immaculate Energy Transition. They think that burying it all in renewables will be enough and we will just stop climate change. And so did Germany believe until a few months ago and now it is reopening coal plants. The reality is that as long as we do not have a viable large-scale storage technology, renewables will not be enough. And in the

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[44] Mauri Pekkarinen, Renew, 2022. Translated from Finnish by DeepL.
[45] Henna Virkkunen, PPE, Finland, 2022. Translated from Finnish by DeepL.

transition, we will need to use nuclear and gas for a very limited period of time. Nuclear is a useful transition technology because it doesn't emit any CO2 and the taxonomy allows investments up to 2045" [46].

This MEP is focusing on the claim that nuclear energy is emission-free, but also that renewables is not a realistic option. He also argues that removing nuclear energy from the energy mix will lead the EU back to coal plants, which makes it more difficult to reach the climate goals. Meanwhile, the Spanish MEPs on the left are concerned with the environmental hazard-frame. This will be further elaborated on in the section on categorizing.

Categorizing

Moving on to categorizing; Categorizing can be seen in the use of member states or regions.

"Romania supports the development of low-carbon energy sources, of which nuclear energy is an important component" [47].

There are two cases of categorizing in the above quote. Firstly, the use of "Romania" implies that the MEP is talking about Romania as a whole. Secondly, nuclear energy is categorized as a "low-carbon energy source". This statement supports the finding that Romanian MEPs use the low-emission frame to a larger degree than other countries. It gives the impression that nuclear energy is widely considered low emission in Romania.

As mentioned in the previous part on selecting, the Spanish left frame nuclear energy by use of the environmental hazard-frame.

> "You are making a mistake and you are not rectifying it. Therefore, ladies and gentlemen, the European Parliament must help the Commission, for the good image of the European Union, to rectify the situation in tomorrow's vote. I know that there are many who have doubts, but I believe that good arguments are being put forward here. And, above all, scientific evidence is one of them. They are not green energies, they should not be in the taxonomy. Parliament must correct the Commission" [48].

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[46] Luis Garicano, Renew, Spain, 2022. Translated from Spanish by DeepL
[47] Marian-Jean Marinescu, PPE, Romania, 2013. Translated from Romanian by DeepL
[48] César Luena, S&D, Spain, 2022. Translated from Spanish by DeepL.

The quote above categorizes by saying that nuclear energy is not green. He justifies this by claiming that it will affect the EU's reputation if nuclear energy is accepted in the taxonomy.

Summary

How the MEPs argue vary vastly on the member state. In some member states, nuclear energy is framed as green across the spectrum. In others, the left and the right disagrees about whether nuclear energy is green or not.

We see that in Finland, the use of the low-emission frame is less absolute than in the other countries using this frame. Although they appreciate the argument that nuclear energy is a low-emission energy source, they do recognize that environmental issues such as waste management exist simultaneously. Romania and France

The finding is thus not in line with the expectation that nuclear energy is framed as green in member states with nuclear energy. It is, however, interesting that France, Romania and Finland stand out, as they are located in vastly different areas of Europe: France in the west, Romania in the southeast, and Finland as a Nordic country. However, as witnessed in Spain, just the fact that a member state has nuclear energy, does not mean that they will label nuclear energy as green, or support nuclear energy at all; there are also ideological powers in play.

5.3 Russian dependence

A final expectation is that MEPs from countries that are dependent on Russian energy in their energy mix will frame nuclear energy as green. The reason why we have this expectation is that we expect MEPs from these countries to be positive towards nuclear energy, as this may be a way to gain energy independence. These countries include Austria, Czechia, Slovakia, Poland, Hungary, Estonia, Latvia, Lithuania, Finland, Bulgaria and Greece.

Model 14: Low emission by member state – Dependence on Russian energy

Low-emission by Member State
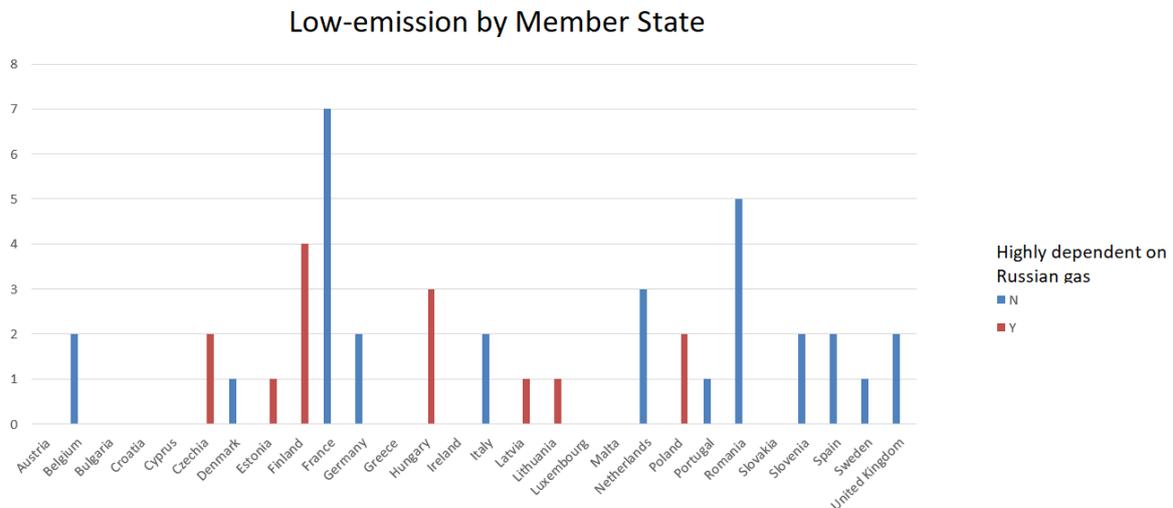
The graph above shows that seven out of the 11 countries highly dependent on Russian gas use the low emissions frame in their speeches: Finland, Czechia, Hungary, Poland, Estonia, Latvia and Lithuania. It is also valuable to look at how the MEPs from these countries frame nuclear energy.

Model 15: Frames by member states highly dependent on Russian gas
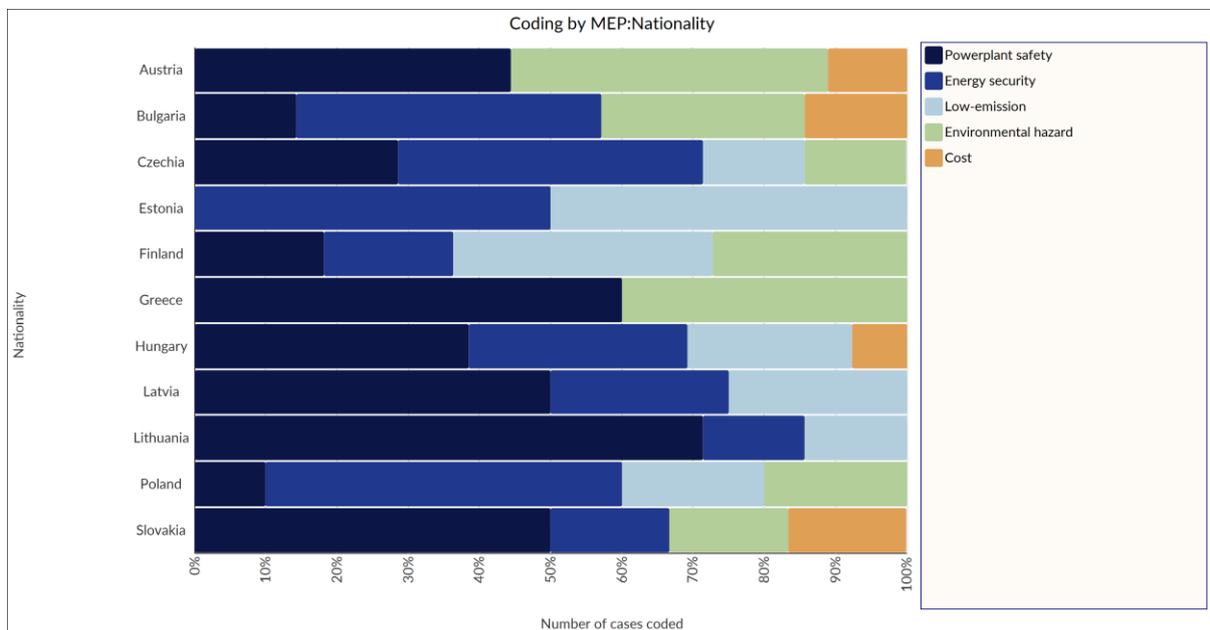
If we look closer at the countries highly dependent on Russian gas, there is little use of the low emission frame overall. Finland is the only country where the low emissions-frame is among the most used. Powerplant safety and energy security trumps in most of the other countries. Estonia only had one speech in the corpus, which explains why the energy security and low

emission frames have such a large share. Austria and Greece are interesting cases, as none of the MEPs uses the energy security frame, but they are concerned with nuclear energy as an environmental hazard. It is nevertheless interesting to dig deeper into the arguments of these countries. Czechia, Bulgaria, Finland, Hungary and Slovakia are countries currently utilizing nuclear energy, while Poland is still planning on taking nuclear energy into use.

In Greece, Bulgaria, Austria and Finland there is more than one use of the environmental hazard frame, which suggests that MEPs from these countries are concerned with the environmental aspect of nuclear energy. As seen in the previous part, Finnish MEPs use the environmental hazard frame simultaneously as the low emission frame, as they often consider nuclear energy being low emission, but also recognize that measures should be in place to handle the potential environmental impact of nuclear energy. As the Finnish green arguments were covered in the last section on energy mix, it is redundant to cover the environmental arguments from Finnish MEPs again.

In Austria, the environmental hazard frame is used across the political spectrum. MEPs from ID, S&D and Verts/ALE, as well as a non-affiliated MEP are using this frame. This suggests that there are strong national powers that see nuclear energy as an environmental hazard in Austria, and that the MEPs have a focus on the environment.

In summary, as we see on the graph, we do not find that countries dependent on Russian gas frame nuclear energy as green. Powerplant safety and energy security are more frequently used.

When diving into the corpus, most of the concepts under naming, selecting and categorizing are already covered by the other sub-chapters. There are few observations of naming that has not been covered earlier; thus it makes sense to move straight to selecting and categorizing.

Selecting

As we see that there is scarce use of the low-emission frame amongst member states that are dependent on Russian gas, it is interesting to see how they argue instead; what topics they are selecting to spend their speaking time on.

Slovakia and Bulgaria are interesting to take a closer look at; both are member states in possession of nuclear energy, but none of their MEPs frame nuclear energy as green.

The Slovak MEPs are using the powerplant safety frame in 2011 and 2013 in a positive way, similarly to other MEPs in favour of nuclear energy, as per the first part on this chapter. Interestingly, several MEPs from S&D select to speak about nuclear energy in a positive sense.

> "There are 47 nuclear powerplants with 111 reactors in the EU, in the vicinity of which (within 30 km) more than 100 000 inhabitants live. Comprehensive risk and safety assessments (stress tests) of nuclear powerplants in the European Union and related activities have been carried out in order to examine the readiness of nuclear powerplants to face a range of extreme conditions. The results of the stress tests will lead to an improvement in the nuclear safety culture in Europe so that it becomes a major model internationally, but we must make efforts to make the stress tests as transparent as possible." [49]

The MEP is stressing the importance of powerplant safety and stress tests, without mentioning energy security at all. This is, again, a typical way of arguing in 2011, but considering that the MEP is selecting to not speak negatively on nuclear energy, this implies that she is positive towards the use of nuclear energy. This also implies that she is following national lines rather than the EP party group.

However, it is thus interesting that the one Slovak MEP from the Renew group is selecting to speak about nuclear energy as an environmental hazard in 2022:

> "Mr President, the role of the green taxonomy was to provide a very clear, unambiguous and precise list of green, renewable and sustainable technologies. There is a great deal of interest in investing in such technologies, and there is a great need to invest in such technologies, because they define our way of saving the climate. The inclusion of gas and nuclear in the list weakens the list, makes the user of the list uncomfortable and misleading. I therefore vote in favour of the objection. It is not a vote against the plan or against nuclear. We do not want to ban these sources by any means, but it is a vote against painting these technologies green. Every single euro that we allocate in self-delusion to these technologies as green will ultimately miss out on supporting the truly green technologies that are at stake in the first place. That is

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[49] Monika Flasikova Benova, S&D, Slovakia, 2011.

why we are voting for clear rules. We are voting for the facts, for green solutions and not voting for greenwashing." [50]

This MEP is voting against nuclear as green, as he understands that a green light for nuclear to halt the investment in traditionally renewable energy sources. He emphasizes that it is not a vote against nuclear in general. This may be because of the current energy crisis, and as an MEP from a country with nuclear energy, highly dependent on Russian gas, it is likely unpopular to speak negatively about nuclear energy at the time of the debate. However, it is also in line with the 2022 manner of debating; the debate is not about whether or not nuclear energy should be phased out, but rather whether it is right to label it green.

For Bulgaria, we also see a focus on energy security.

> "Mr President, this is not a debate about values, this is not a debate for or against the green goals that we have all set ourselves and around which we have all united. This is a debate about whether to allow temporary funding for energy sources that are crucial for European citizens and industry.
>
> The question is not whether we will continue to invest in them because they are needed, the question is where the money will come from. Are we going to make it easier for these projects to be financed privately? Are we going to create a regulatory framework to generate fresh money in the energy sector, or are we going to put a strain on the state's public finances, which are currently limited and need to be directed towards tackling more serious problems such as the economic and social crisis. I urge you to vote for the taxonomy." [51]

This MEP from Bulgaria claims in her speech from 2022 that the debate of whether to include nuclear energy in the taxonomy is not about the climate goals, but about the necessity of nuclear energy today. This is, again, a typical Central and Eastern type of argument, focusing on the importance of investments in nuclear energy to ensure energy supply.

We see that the MEPs from Czechia, Bulgaria and Poland frame nuclear energy as a means of energy security rather than focusing on the environmental frames. This is in line with the expectation that Central and Eastern Europe focus more on energy security than the potential

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[50] Michal Wiezik, Renew, Slovakia, 2022. Translated from Slovak by DeepL.
[51] Tsvetelina Penkova, S&D, Bulgaria, 2022. Translated from Bulgarian by DeepL.

climate gains.

Categorizing

For categorizing, it is interesting to look closer at Austria, and how they are arguing against nuclear energy as green. We see the categorizing of nuclear energy as an environmental hazard by Austrian MEPs already in 2011.

> "You should withdraw this implementing regulation immediately and preferably today. We must invest in and make use of alternative energies. They do exist. They are safe, environmentally friendly and less harmful to people. One more point: they create new jobs" [52]

By calling alternative energies "safe", "environmentally friendly" and "less harmful", the MEP categorizes nuclear energy as unsafe, environmentally unfriendly and harmful. In 2011, there is thus already a focus on the environmental harm that arguably follows the use of nuclear energy.

> "The whole thing is based on a "inhouse"-report from the European Commission, which does not even cover what to do with the nuclear waste, or if incidents may happen. A clear "no" is coming from us for this taxonomy."[53]

It is interesting to look closer at "A clear "no" is coming from us for this taxonomy". Considering that the MEP is from ID, a group that is often in favour of nuclear energy, it is likely that the MEP is referring to Austrians when he is talking about "us". This further sets a precedent for strong national powers in Austria in the field of nuclear energy.

Summary

There is scarce proof that nuclear energy is framed as green amongst member states that are highly dependent on Russian gas. Both Greece and Austria had low public acceptance of nuclear energy even before the Fukushima accident (Kim et al., 2013). It is thus no surprise that the elected officials from these countries do not use the low-emission frame, which is mainly used in a positive sense. The assumption that Austria is concerned with nuclear energy as an environmental hazard is in line with the expectation that Western European countries are using frames that appeal to the environment. This is the case for the whole political spectrum;

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[52] Angelika Werthmann, NI, Austria, 2011
[53] Georg Mayer, ID, Austria, 2022. My translation from German.

from the far right to the left. This suggests that nuclear energy in Austria has a strong domestic drive. It may also suggest that there is a pro/anti-EU cleavage in play; that the Eurosceptic right-wing is more likely to follow national interests than the interests of their EP party group. However, what de do find is that MEPs from some Central and Eastern member states are more concerned with energy security than climate. This is particularly visible in Bulgaria, but also in Slovakia.

The findings are thus not in line with the expectation that MEPs from countries that are reliant on Russian gas will argue that nuclear energy is green or support nuclear energy at all.

5.5 Discussion

This is a suitable time to revisit the research question:

How has the framing of nuclear energy evolved in the European Parliament since the Fukushima accident, and who is framing nuclear energy as green?

Let us firstly address the first part of the research question: Has the framing of nuclear energy in the European parliament become greener since the Fukushima accident? This thesis shows that the answer is yes. There has been a shift in the main frames in the EP since the Fukushima accident. Powerplant safety dominated the debate on nuclear energy in the EP between 2011-2013, while the environmental frames, low-emission and environmental hazard, gained more support from 2015 onwards. This suggests that the turmoil from the Fukushima accident settled after a few years, and powerplant safety as a dominant frame had to yield in favour of green frames. Because the two environmental frames are dominating, it suggests a competition between low-emission and environmental hazard. The green frames are perceived more convincing by their users.

This also suggests that nuclear energy as an environmental hazard in 2022 is considered a more convincing frame amongst the opponents to nuclear energy, than powerplant safety. We may thus refer to Minin (2020), who found that the interest of nuclear energy in the public sphere decreased already a year after the Fukushima accident. The use of the environmental hazard-frame is particularly visible through the naming of nuclear energy as "greenwashing", which is exclusively used in 2022. The frames that appeal to the climate and environment are indeed more frequently used in 2022 than in 2011, after the Fukushima accident. This may be

attributed to the crossroads between the crossover between climate, environmental and energy policy.

When it comes to the supporters of nuclear energy in 2022, we find that the low-emission frame is often used in combination with the energy security frame. This is a typical example of the crossroad between climate and energy policy.

Several opponents of nuclear energy in 2022 accuse the EC of committing "greenwashing" and putting financial benefits above environmental considerations.

> "We cannot continue to treat energy as a source of profit and income for multinationals and monopolies. Energy is a common good and any European energy strategy must take this into account" [54].

The debates analysed in this thesis were held in the aftermath of events of salience for European energy supply. The first two debates were held after the Fukushima accident, which sparked a debate about energy security. The 2015 debate took place after tensions in Ukraine, while the final debate happened after Russia's invasion of Ukraine. The topic of the debates likely affected the arguments the MEPs made. The debate from 2015 is particularly interesting, as it concerns energy supply in general. The MEPs choosing to use their speaking time to argue either in favour or against nuclear energy in this debate, likely considers nuclear energy as an issue of high salience, for better or for worse. Meanwhile, in 2022, Russia's invasion of Ukraine may have caused MEPs who initially would not utilise the low emission frame to use this frame to win over the MEPs still unsure on the matter.

> "If we were faced with the situation six months ago, when the Commission proposed to extend the taxonomy to include gas and nuclear, I would support the objection to this move." [55]

This quote suggests that the MEP normally would not accept nuclear energy in the taxonomy, and does not consider nuclear energy as green per se. However, he is supporting the classification of nuclear energy as green in the taxonomy because of the situation in Ukraine to secure energy supplies. This is in line with the argument that the Russian invasion of Ukraine moves the focus from climate to energy security (Giuli & Oberthür, 2023). It is thus possible that this is the view of other MEPs as well, but they are selecting to not speak about it.

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[54] Marisa Matias, GUE/NGL, Portugal, 2015. Translated from Portuguese by DeepL
[55] MEP Robert Hajšel, S&D, Debate 05/07/2022. Translated from Slovakian by DeepL

To answer the first part of the research question; the powerplant safety frame was the most dominating in 2011 and 2013. In 2015, we saw a shift to the framing of nuclear energy as an environmental hazard. In 2022, the low-emission frame and the environmental hazard frame were competing, arguably because of the proposal of including nuclear energy in the taxonomy. However, the analysis suggests that nuclear energy has indeed become greener in the EP since the Fukushima accident.

Moving on to the next part of the research question; who is arguing that nuclear energy is green? It makes sense to start with addressing the left-right cleavage, as this is the first expectation.

There is a clear left-right divide when looking at who uses the green frames. This is particularly visible for the two largest groups in the EP; the centre-right PPE and the centre-left S&D. In 2022, the left is framing nuclear energy as an environmental hazard.

There is likely a different understanding between the left and the right about the term "sustainability", or "green". Here it is reasonable to move back to Morata & Solorio Sandoval (2013), who argue that sustainability refers to the environmental impact of an energy source, while climate refers to the greenhouse gas emission. The assumption in this study is that the MEPs that use the low emission frame when arguing about nuclear energy, understand the term "green" as "low emission". The MEPs who argue against this frame understand "green" as the environmental impact. This is visible through the use of naming. When the left names nuclear energy "greenwashing", it suggests that the left claims that there is more to the environmental aspect of nuclear energy than just low emission. We see that there, for instance, are mentions of dangerous waste. It is also interesting that even the right-wing Eurosceptic groups use the environmental hazard-frame. This may be attributed to the pro/anti EU cleavage, and will be further elaborated on later in this subchapter.

As for the national expectations, their findings vary vastly. Let us firstly address the expectation that MEPs from member states with nuclear energy frame nuclear energy as green.

Most of the MEPs from member states that possess nuclear powerplants have at least some MEPs that argue that nuclear energy is green. The exception is Slovakia and Bulgaria, where there are no findings of nuclear energy being framed as green. In Bulgaria, we see that the powerplant safety frame is dominant, which is in line with the expectation that nuclear energy supporters from Central and Eastern Europe are more concerned with energy security rather than environmental arguments.

There are three member states that stand out as the most significant users of the low-emission frame; Finland, France and Romania. Finland and Romania are interesting countries, as they have advocates for nuclear energy across the political spectrum. They argue differently; which is in line with the expectation that MEPs from Northern Europe may frame nuclear energy differently than MEPs from Eastern Europe.

The MEPs from Romania, no matter the party group, use the low-emission frame; even the left. It should be noted that the MEP from S&D used the low-emission frame in 2022, when the debate was on the inclusion of nuclear energy in the taxonomy. However, this still implies that there are national powers that determine the views of Romanian MEPs.

In Finland, we see a more nuanced use of nuclear energy as green. There is a clear stance across the political spectrum that nuclear energy has benefits regarding decarbonization. However, they still address that nuclear energy is not problem free, and that there are certain environmental issues that follow, such as waste management. This may also be tied to the MEPs' perception of the concept "green" – the Finnish MEPs may understand "green" as a combination of climate and environmental aspects.

Referring to Klüver and Spoon (2015), the expectation is that MEPs may argue similarly to national peers rather than their ideological party groups in issues of high salience. This is for instance visible in Austria, where the members of the Eurosceptical group ID are not framing nuclear as a low-emission energy source. One reason for this could be that nuclear energy is indeed considered a high salience issue in Austria. Deutsch (2017) claims that Austria was strongly against nuclear energy even before the Fukushima accident. This suggests that Austrians would generally be against nuclear energy, and would not frame nuclear energy in a positive way. Another possibility is that it supports the pro/anti EU cleavage, which may also be dominating in votes on climate- and energy policy (Buzogány & Ćetković, 2021). The Eurosceptics may follow an anti-EU cleavage by supporting national interests rather than the interests of their EP party group (supranational level).

The assumption of the analysis was initially that MEPs who argue that nuclear energy is green refer to the assumption that nuclear energy is a low-emission energy source. At the same time, MEPs that believe that nuclear energy is an environmental hazard do not frame nuclear energy as green. However, these two concepts are not mutually exclusive as we see with the Finnish MEPs, who appreciate that nuclear energy is virtually emission-free, but there are still environmental issues that follow, and need to be solved for nuclear energy to be a completely unproblematic source of energy for the environment. This may also refer back to how

"environment" and "climate" are two different concepts (Morata & Solorio Sandoval, 2013). Similarly, another argument used by the right is that the EU is not able to reach its climate goals without nuclear energy. This refers to nuclear energy being perceived greener than the alternatives, which may be coal and oil.

We also see that the understanding of nuclear energy as a means of energy security is a dominant frame amongst supporters of nuclear energy. This is different from Minin's (2020) finding of nuclear energy as a decarbonization source as the most common discourse amongst supporters of nuclear energy. However, this may be explained by the crossroad between energy and climate policy. The frames are often used in combination with each other; nuclear energy should be used as a means to achieve energy security, and it is perceived as a climate friendly way of doing so.

Another explanation may be the EP as a green champion. This may be related to the Commission labelling nuclear energy as a means of achieving decarbonization (Minin, 2020). However, this also implies that the MEPs framing nuclear energy as an environmental hazard understand that the inclusion of nuclear energy in the taxonomy jeopardizes the EP's perceived role as an environmental champion. This may be in line with Burns & Carter (2010), who suggest that the environmental ambition of the EP may have declined over time. This is again a place where the environmental hazard frame and low-emission frame compete.

On a similar note, a comment on the left-right divide is necessary. The analysis finds that the right is more likely to frame nuclear energy as green than the left, in line with the hypothesis. However, the literature suggests that the left is more concerned with questions on climate and the environment than the right. The finding that the right frame nuclear energy may, like above, be attributed to questions on climate gaining more leverage on the EU agenda. This may also be attributed to the left, according to the literature, being more concerned with the environment, and thus the overall impact of nuclear energy on the environment.

There is also an observation of the frames complementing each other, rather than competing. There are many aspects of nuclear energy, and these aspects are combined to create a full understanding of what nuclear energy is about. What is important to emphasize here is that nuclear energy is, by the supporters of nuclear energy, seen as a climate friendly way of reaching energy security (Deutsch, 2017). This is also the finding in this analysis. The framing of nuclear energy as a low-emission energy source is often not used on its own, but rather as a way of reaching energy security. On the other side, MEPs framing nuclear energy as an environmental hazard may to a larger degree use this frame on its own.

It is also possible that MEPs used the climate- and environmental frames due to the integration of environmental policy in the EU. Previous research ties arguments of nuclear energy as a decarbonization source to the EU's increased focus on climate (Minin, 2020). As mentioned in previous chapters, climate has for the last few decades become one of the most important policy areas for the EP. This also suggests that the MEPs will use the environmental frames because they know that environmental arguments have salience in the EP. This also suggests that one may indeed place this study in the wider literature on the crossing between climate, environmental and energy policy.

However, in their home countries, particularly in southern and eastern Europe, the environmental frames may yield in favour of arguments about energy security. This is visible in Bulgaria and Slovakia. Even in 2022, the MEPs are considering nuclear energy as a natural part of the energy mix, and that the focus should be on securing powerplants and funds. It would be interesting to conduct further research on the difference in framing between the neighbouring countries Romania and Bulgaria. A possible reason could be that Bulgaria, being dependent on Russian gas, has different priorities than Romania, which is not dependent on Russian gas.

6.0 Conclusion & future research

This thesis has performed a qualitative content analysis of debates in the EP to understand how the framing of nuclear energy has evolved in the EP after the Fukushima accident, and which MEPs frame nuclear energy as green.

We find that the debates in 2011 and 2013 mainly surround powerplant safety. In 2015 the environmental arguments increased, mainly in a negative sense. In 2022, nuclear energy as a green energy source is a leading frame, but is often used in combination with energy security. We thus see a clearer crossover between the policy areas of energy and climate in 2022 than in 2011. This may be attributed to the increased focus on climate and the environment. It may also be explained by the time of the debate in 2022, in the midst of an energy crisis in Europe, where ways of reaching energy security may have trumped green considerations.

We also find that there is an ideological cleavage in the argumentation of nuclear energy as green. Aside from some outliers, the centre-right to right are the ones using the argument of nuclear energy as green, while the left will not frame nuclear energy as green. This may be attributed to different understandings of the term "green energy"; whether it means low-emission, or the environment.

 In some cases, national considerations trump ideology. This is particularly clear in the case of Austria; where the MEPs from far-right party groups argue that nuclear energy is an environmental hazard. It is also clear in Finland and Romania, where MEPs from both the left and right address nuclear energy as a low-emission source.

The assumption that events that affect European energy supply or powerplant safety sets a precedent for further research on how major events affect MEPs' perception of nuclear energy. This can be done for instance through the application of multiple streams framework or punctuated equilibrium theory. Another interesting study could be a mapping of arguments in the EP in comparison to a national government, to understand the disparity between nuclear energy on a nation-state level and a European level. Lastly, this thesis has looked at one economic frame; however, it would be interesting to look further at the economical aspects of nuclear energy.

Lastly, support for nuclear energy is not necessarily dichotomous. There are different degrees of supporting nuclear energy. On the one side of the spectrum, some MEPs are fully in favour of nuclear energy, on the other the MEPs are arguing for a full phase-out. In between these

points, some MEPs believe that nuclear energy should be used as a transitional energy source during the green transition. This could be an interesting topic for further research; to examine nuclear energy as green with a larger focus on who is pro, neutral and against nuclear energy.

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Appendix: Code book

Name	Description
Economy	
Cost	Arguments of nuclear energy as an expense. Examples: Who is footing the bill, nuclear energy on the expense of renewables.
Categorizing - Cost	Use of words that describe nuclear energy as an expense. Example: Expensive
Naming - Cost	Use of words that describe nuclear energy as an expense. Example: Financial burden.
Selecting - Cost	Selecting to use their speaking time arguing, explicitly or implicitly, about nuclear energy as an expense. Example: Who is paying the cost.
Climate and environment	Arguments of nuclear energy as either a benefit or a hazard for the climate or environment.
Environmental hazard	Arguments of nuclear energy as an environmental hazard. Examples: Waste disposal, emissions
Categorizing - Environmental Hazard	Arguments of nuclear energy as an environmental hazard. Example: Unsustainable
Naming - Environmental Hazard	Use of words that describe nuclear energy as an environmental hazard. Example: Greenwashing
Selecting - Environmental Hazard	Selecting to use their speaking time arguing, explicitly or implicitly, about nuclear energy as an environmental hazard. Example: Implications of nuclear energy on the environment
Low emission	Arguments of nuclear energy as an environmentally friendly energy source.
Categorizing - Low Emission	Use of words that puts nuclear energy in an environmentally friendly category. Example: Green
Naming - Low emission	Use of words that describe nuclear energy specifically as an environmentally friendy energy source. Example: Energy of the future
Selecting - Low Emissions	Selecting to use their speaking time arguing, explicitly or implicilty, about nuclear energy as an environmentally friendly energy source. Example: Nuclear energy as a low-emission energy source.

Name	Description
Security and safety	Arguments of nuclear energy as a way of ensuring energy security, or nuclear energy as a safety hazard.
Energy security	Mentions of nuclear energy as a source of achieving energy security. Examples: cheaper energy, energy independence.
Categorizing - Energy security	Use of words that categorizes nuclear energy as.a way of reaching energy security. Example: Affordable energy, mentions of particular areas
Naming - Energy security	Use of words that describe nuclear energy specifically as a way to gain energy security. Example: Energy crisis
Selecting - Energy Security	Selecting to use their speaking time arguing, explicitly or implicilty, about nuclear energy as a way to obtain energy security, or speaking about how nuclear energy is a "necessity".
Powerplant safety	Arguments of securing of powerplants to avoid nuclear disasters.
Categorizing - Powerplant safety	Use of words that categorizes nuclear energy as an issue of powerplant safety. Example: Unsafe
Naming - Powerplant safety	Use of words that describe nuclear energy as an issue of powerplant safety. Example: Risk
Selecting - Powerplant safety	Selecting to use their speaking time arguing, explicitly or implicitly, about powerplant safety. Example: Speaking about the Fukushima accident.