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DOCUMENTATION FOR THE DATASET OF THE RESEARCH PROJECT "POLICYMAKERS' PERCEPTIONS OF CLIMATE POLICY INSTRUMENTS"

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Abstract

This paper documents the data collection and coding process of the qualitative interview data from the "Policymakers' Perceptions of Climate Policy Instruments" project. This data documentation follows the standard for qualitative research and data policy of the American Journal of Political Science (AJPS, 2023) and its guidelines for the provision of replication files. Given the impossibility of making the transcripts of our interviews public, we aim at least to present the entire process of data collection and analysis as transparently as possible, in order to enable a critical reception of our work to the interested reader. We begin by briefly outlining the research interest of the project and presenting the research question and its relevance. We then justify the choice of cases and provide a brief description of the selected cases. Next, we describe the chosen method and the design of the qualitative semi-structured questionnaire. This is followed by an account of the data collection process and a description of the final sample. Finally, we explain our method of analysis.

Key Words

climate policy, policy instruments, qualitative methods, semi-structured expert interviews, qualitative content analysis

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Documentation for the dataset of the research project "Policymakers' Perceptions of Climate Policy Instruments"

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1. Introduction

1.1 Project description

"Policymakers' Perceptions of Climate Policy Instruments" is an interdisciplinary research project with a primary focus on climate policy instruments in the electricity and industrial sectors at the EU and member state levels. The research project is led by Prof. Kai-Uwe Schnapp (Political Science) and Prof. Grischa Perino (Environmental Economics) and located in the Cluster of Excellence "Climate, Climatic Change, and Society" (CLICCS) at the University of Hamburg, which conducts basic research on climate dynamics and climate-related societal dynamics. The EU has recently increased the ambition of its climate goals significantly. The ongoing process of revising climate policy instruments at both the EU and member state levels is critical to achieving these goals. The project aims at a better understanding of the goals, perceptions and preferences about specific climate policy instruments from those who help shape and implement them. To accomplish this, the project is, among other things, conducting qualitative interviews with individuals who are actively involved in the policymaking process and who support or influence that process.

1.2 Research interest

While climate policy for a long time has consisted of international negotiations and formulating goals and ambitions, it has now become more evident than ever: the most ambitious goal is worthless if not followed up with ambitious pathways to implement. This so-called implementation gap (Perino, Jarke-Neuert et al., 2022) is one of the most pressing policy issues of our time. There is an urgent need in climate policymaking to talk about policy instruments and in policymaking research to study why and how certain policy instruments are chosen.

The literature on the policymaking process and policy instruments has long been divided —the latter being mostly filled by economists evaluating policy instruments' performance and desirability under aspects such as (cost-)effectiveness and efficiency; the former dominated by political scientists who adopt a descriptive and explanatory lens to examine the struggle of

interest and power throughout different stages of policymaking (Jordan et al., 2011). Both remain insufficient for this important task: the instrument literature has remained ignorant of the political system and structures that surround policymaking decisions, while the policy literature has largely ignored policy instruments, seeing them as uncontentious and neutral tools, focusing on power struggles around goal-setting. Yet, as a constructivist turn in the literature has shown, policy instruments are not neutral (Ringeling, 2005; Ringeling & van Nispen, 1998), they have a life of their own (Voß & Simons, 2014, 2018) and policymakers' perceptions of policy instruments matter (Linder & Peters, 1989). Since the late 1980s, researchers have thus called to empirically study how policymakers' perceptions impact instrument choice more thoroughly, yet research on that topic has remained scarce until now (Capano & Howlett, 2020).

But naturally, one instrument rarely comes alone – especially in such a cross-cutting matter as climate policy. There is a strand of literature theorizing and empirically looking into the interactions of multiple policy instruments (Fankhauser et al., 2010; Flanagan et al., 2011; Rogge & Reichardt, 2016). According to this literature, instruments do not necessarily complement each other in practice, they can also be contradictory and limit each other's effectiveness. A telling example of this is the German coal phase-out and the European Union Emissions Trading System (EU ETS) (Perino et al., 2023; Umweltbundesamt, 2016; Willner & Perino, 2022). Before 2018, climate policies overlapping with the EU ETS had no direct or potentially counterproductive indirect effects on emissions (Jarke & Perino, 2017). The 2018 reform of the EU ETS introduced both a provision that allowed member states to cancel allowances unilaterally to supplement national coal phase-outs as well as enabled the Market Stability Reserve (MSR) to automatically cancel allowances if sufficiently many allowances are transferred by firms to future years (banking). Both amendments aimed at reducing the so-called 'waterbed effect', however, they undermined each other (Gerlagh & Heijmans, 2019; Perino, 2018). If member states cancel allowances, this reduces the number of allowances cancelled automatically by the MSR. The 2023 reform strengthened both mechanisms. Cancellations by member states are no longer merely an option but are considered the norm. However, the adjustment to the automatic cancellations in the MSR implies that at least while automatic cancellations take place, unilateral cancellations by member states would replace the automatic ones one by one. Cancellations by member states are hence completely ineffective (Perino, Willner et al., 2022). For a national coal phase-out to reduce emissions, member states can rely on the MSR to take care of allowance cancellations until automatic cancellations cease. Thereafter, member states need to cancel allowances unilaterally.

Therefore, this project seeks to explore:

When choosing policy instruments and adding them to the instrument mix, to what extent are policymakers aware of potential interactions and what role does the expected impact play in their decision-making?

2. Data Collection

2.1 Open-ended expert interviews

Policy formulation is a process involving a myriad of actors with multiple priorities that must be navigated. In order to explore these elements and to answer our research question, we conducted semi-structured qualitative interviews with policymakers and other relevant stakeholders who participate in policy formulation or otherwise influence the discourse/agenda.

To analyse perceptions is methodically difficult, as one can never be sure if the expressed opinion is the true perception and what is really taking place in the heads of the interview partners (Béland 2016; Linder and Peters 1989; Saurugger 2013). However, it has been shown that expert interviews can be a useful method from a constructivist perspective. They allow for an exploration of the meaning structures in which policymakers locate themselves, how they evaluate opposing ideas and how reflective they are of their own positioning within a political spectrum (Daigneault, 2014; Hogan & Howlett, 2015).

We aimed to keep the questionnaire as well as the interview situation as open as possible for the interview partners to feel free to express their views and understandings.

2.2 Case selection

We conducted interviews with policymakers involved with the EU ETS at European institutions in Brussels and with national policymakers in the same field in Germany, France and Poland. The project is primarily interested in the interactions of supplementary national policies in sectors covered by the EU ETS, specifically industry and energy policy. Thus, the cases were chosen based on Lijphardt's most different systems design (Lijphart, 1975). Germany, France and Poland represent ideal cases regarding different national strategies in the energy and industry policy sector and thus allow for comparing analytically different perspectives when it comes to their perceptions of EU policy. In 2010, Germany decided to largely invest in renewable energies, implementing the so-called "Energiewende", phasing out nuclear power plants and committed to exit coal with the mandatory, regulatory law "Kohleausstieg" (Agora Energiewende, 2022) in 2020. France primarily relies on nuclear energy in its energy production and has the lowest

proportion of renewable energy in their national energy mix in the whole of Europe (Aykut, 2019). Poland by tradition and culture heavily relies on using coal as a primary source of energy production, with regions fully relying on that sector (Skjærseth, 2018).

2.3 Design of questionnaire

The questionnaire was developed following basic rules for qualitative questionnaires – using an introductory question that allows for a warming-up, not asking suggestive or too narrow questions and not directly approaching sensitive topics but rather using proxy questions (Przyborski & Wohlrab-Sahr, 2014). It is documented in Table 1 below.

The initial section consisted of an entry question (Question 1 in Table 1 below) to allow the interviewee to settle into the conversation and focused on the policymakers' core beliefs on climate change and climate policy in the EU and their own country. We also enquired about the individual's own objectives and goals and how these align with those of their institution, to determine if or how they are able to situate themselves in a broader context of political opinions. This was followed up with questions regarding the policymakers' instrument beliefs, the EU ETS and other instruments in the policy field (Question 2). Question 3 is concerned with the policymakers' instrument beliefs regarding the EU ETS and other instruments in the policy field. Afterwards, in question 4, we enquired which criteria an instrument should fulfil in their opinion, revealing their core and instrument beliefs. This laid the groundwork for a later analysis to understand what truly impacts policymakers' instrument beliefs. Thereafter, we asked about their perceptions of instrument mixes – which instruments should be used in an ideal mix, which mixes should be avoided and why and how they evaluate the existing mix (Question 5). Furthermore, we asked questions about the role of social policy and welfare in their considerations to distil some core beliefs about what welfare means to them and their stance towards redistribution (Question 6). Then we asked some more specific questions about the design of the current Fit-for-55 package to those who were actively involved in it on the EU level and in the national bureaucracy (Question 7). Question 8 aimed to indirectly reveal the policymakers' core beliefs and the goals that were most important to them – this was asked through proxy questions. This was followed by some enquiries about their direct network, their sources of information and how they evaluate knowledge of their trustworthiness (Question 9). Further, some socio-demographic information was collected (Question 10). Finally, the interest of the introductory question was taken up again, utilising the momentum of the interview to find out more about the policymakers' core beliefs with a very open question about what they would change if they could dream big (Question 11).

The questionnaire layout was designed following the suggestion of Kruse (2015, p. 209 ff), using index cards containing one overarching question and having the research interest written in a box underneath to remind the interviewer of the initial interest behind the question. In addition, we prepared questions for further inquiry, to ask in case the interviewee did not answer the overarching questions directly in their initial response. Further questions for maintenance, such as “how/why/in which regard exactly”, were included in order to keep the interview flowing. The questionnaire was tested with three interview partners who were not regarded as key informants but had sufficient knowledge in the field and thus were able to give a good indication of how well the questions work but were not regarded as key informants. The questionnaire was revised after a thorough reflection of those pretest interviews.

Table 1 below gives an overview of the questionnaire.

Table 1: Questionnaire

Overarching Topic	Research Interest	Question(s)
1) Entry question and policy objectives	– Get a first impression of the interviewee's own perception of climate policy and their sense-making therein. – Is the interviewee familiar with the topic of climate protection/the EU climate goals in general? – Determine the preferences of policymakers with respect to policy goals.	**This is my first question: Could you briefly describe your daily work?** – How does your daily work relate to climate policy and climate action?
2) Perception of climate policy	– Understand the interviewee's attitude toward EU climate goals. Does s/he consider them as too ambitious/not ambitious enough? – Determine whether goals are individual or organizational goals.	**Generally speaking, what do you think about EU climate policy?** – To what extent does your institution/organization share the current EU climate goals?
3) Instrument preferences I	– Determine the preferences of policymakers with respect to policy instruments. – Analytic interest: consistency of instrument preferences and meta-beliefs.	**In your opinion, which tools and instruments are most appropriate to achieve the EU climate goals in the electricity and industry sectors (or the climate goals of your home country)?** – What do you think of the EU Emission Trading System (EU ETS)? – What is its contribution to achieving the EU climate goals in those sectors? – Do you think that this will change in the next few years? – How do you evaluate other instruments to reduce emissions compared to carbon pricing? Are they better or worse suited for reducing emissions than the EU ETS?

4) Instrument preferences II	Determine the preferences of policymakers with respect to policy instruments.	**Which objectives/characteristics/criteria (for non-economist interview partners) are important to you when thinking about climate policy instruments?** – Are you aware of any relevant side effects?
5) Interdependencies between instruments	– Here we want to find out about the actor's strategies for reaching solutions (instrument mixes). – Enquire the extent to which political feasibility shapes the ideas and strategies of the actor.	**You just named several instruments to reduce greenhouse gas emissions. Are you aware of any interactions between these instruments?** – Are there instrument combinations that you think should be avoided? If so: Why? *In case the combination of coal vs. emissions trading is not named here by the interviewees themselves; ask:* – Some would say that incentivising abatement by the EU ETS and a mandatory coal phase-out contradict each other. What do you think about that? *In case the person interviewed appears to be familiar with details of the EU ETS, ask:* – We talked about the interaction between the EU ETS and other climate policies. In that context, what do you think is the role of the Market Stability Reserve?
6) Interplay of social and climate policy	This block seeks to enquire about the knowledge and consciousness of actors for and about the interlinkage between the topics and which narratives are told about the social costs/effects of climate policy.	**Some people say that climate policies affect people's livelihoods. Which role do such considerations play in your thinking?** – Which social policy instruments do you consider effective for alleviating the social costs of climate policies? *If the person interviewed appears to be well informed about the EU ETS, ask:*

		– How important do you consider more effective management of allowance prices in the EU ETS for social or other reasons? – Are you familiar with the price-stabilization mechanism [in Article 29a of the EU ETS directive]? – Do you have preferences to change it? If so, how?
7) The Fit-for-55 package and amendment of the MSR	– Ask specifically about what happened during the Fit-for-55 policymaking process and the amendments of the Market Stability Reserve (MSR). What were the interests of different actors? Which roles did they play? Which actors are how satisfied with the results? – If people go into legitimacy questions, do not immediately interrupt.	**In the context of the Fit-for-55 package, there is a discussion to reform the EU ETS. What is your position in this discussion?** – Which actors were particularly influential? – Can you identify particularly effective advocacy groups? – What was their role? – Who was driving the process and who dragged his feet? – What types of arguments and issues did these actors use in their lobbying? – Which strategies were most effective? – Concerning the make-over of the EU ETS: What would be your ideal outcome or what is still missing in your opinion? – And how about the suggested changes in the MSR?
8) Meta-questions	Analytic interest: consistency of instrument preferences and meta-beliefs.	**Generally speaking, what do you want to achieve with your own work in the field of climate policy?** – Why do you want to achieve this objective? – How do you want to achieve this objective? – In your opinion, what are the key political constraints to changing the current mix of climate policy instruments? – How would a carbon-free world ideally look to you? – What is, in your view, the difference between environmental policy and climate policy?

		– Which energies are most suitable in your country to sustain your country's energy supply? Why?
9) Reference System	– Identify sources of the actor's beliefs (education, former jobs...) – What shaped their beliefs and fundamental reference system? – Awareness of the influence of their own bubble on their opinions?	**How do you get informed about recent developments in the realm of climate policy and the effects of individual instruments?** – Which academic institutions/researchers are you in contact with/do you "listen" to? – Why did you choose those? – How do you evaluate/estimate their trustworthiness/correctness? – Has there been a special occasion or phase in your life that shaped your thoughts about climate change and climate policy? – I can imagine that, on a personal level, you have had to deal with some frustrations over time when working in this difficult field for as long as you have. How does that make you feel?
10) Biographic information		– Which year were you born in? – Do you hold an academic degree or degrees? – If so, which disciplines did you study at which academic level (UG, PG, PhD)? – For how many years have you been working with your current institution/employer? – What is the exact name of your job position?

		– Professional background - What previous education(s)/experience do you have regarding your current job?
11) Closing	– Leave space for things that the person would still like to share. – Find out about other possible interview partners.	**Finally: If you had the power, what exactly would you change in the current policy mix? Think freely.** **Thank you for all the interesting insights. We have come to the end of my questionnaire now. Is there anything that we haven't talked about yet, that is still important to cover in your view?** – Is there anybody else that we should talk to in your opinion?

Source: created by the authors

2.4 Data collection and sample composition

As described above, our aim was to interview policymakers in the field of energy policy, especially in the context of the EU ETS. We define "policymakers" as actors taking an active part in this policymaking process. This includes first-order policymakers such as members of parliaments and ministerial bureaucrats as well as second-order policymakers who represent different interests ranging from NGOs to industry (see Figure 1 for a breakdown of actors).

The interview partners were chosen based on in-depth desk research into the policy field as well as snowball sampling during the field stage of data collection. We a priori defined our sample as sufficient for analysis with at least two interviewees per category per country and with representation across the full party spectrum on the parliamentary side. This can, of course, not guarantee absolute representativeness in a quantitative sense but representativeness of content (Misoch, 2019). We started the data collection in May 2022. We contacted potential interview partners via email, sending them a mail with an official letter, describing the project and the interview situation and asking for their participation. If they agreed, we sent another document informing them about their rights and the data protection agreement. Once this was signed, we set up an interview date. In total, we contacted 186 persons. We heard back from 50 people and finally interviewed a total of 39 experts.

Table 2: Field report

	absolute number	% of contacted
Contacted	168	100%
Responded	50	30%
Interviews conducted	39	23%

Source: created by the authors

The interviews were conducted by four members of the research team (Anne Gerstenberg, Ella Karnik Hinks, Johannes Jarke-Neuert, Kai-Uwe Schnapp). Two interviews in Polish were conducted and translated into English by Wojciech Wereszko. Grischa Perino abstained from interviewing because of his close involvement as a scientific consultant in these policy discourses. The interviews had an average length of one hour. Most interviews were conducted online via video call, some in person. While the in-person interviews would allow the researchers a greater immersion into the institution and daily reality of the interview partners, the

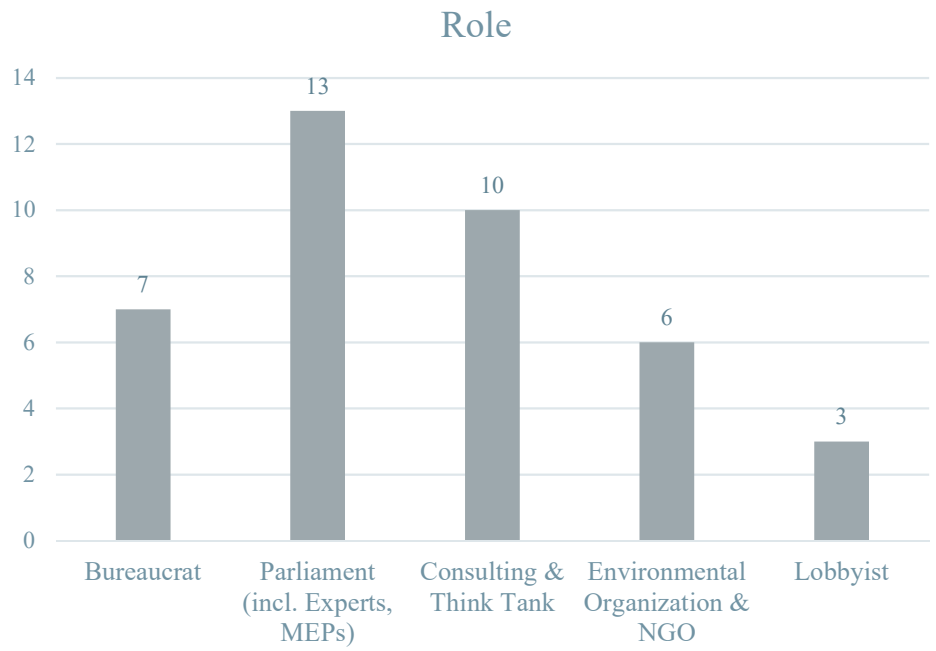
researchers did not experience a loss in quality, depth or information in the video-call interviews. In addition, the video-call interviews allowed for a higher turnout because of the lowered participation hurdles of online interviews. After receiving the written consent from interview partners, all interviews were recorded, transcribed and anonymized. The interviews were conducted in German, Polish and English. German and Polish interviews were translated into English for the analysis. The transcripts were conducted by the contractor *abtipper.de* using the simple transcription after Dresig & Pehl (2010). According to this system, significant prosodic information like long pauses or laughter was transcribed while minor prosodic information was not. These transcription rules perfectly fit our research purpose as, given our first and foremost informational interest, minor prosodic elements and other finer details of the communication were not of concern to us.

Each interview was conducted by two researchers. Prior to the commencement of the interviews, a principal interviewer was designated, the other person assuming the role of intervening if they deemed a pertinent topic merited further inquiry. Additionally, the second interviewer documented the interviews in a structured format, encompassing the respondents' positions and statements on the core interview topics. Following the conclusion of the interviews, the two interviewers engaged in exchanging and discussing their respective impressions of the interview and noted these observations in memos. The structured notes, in conjunction with the memos, constituted a comprehensive record of the individual cases, facilitating an engagement with the interview material for the other project participants, who were not conducting the interviews.

Our interviews were held over a long period, with some major events related to our research topic occurring in the meantime (e.g. post-Covid recession, Russia’s war against Ukraine, strong inflation). As was explicitly reported by our interviewees, these events did have an impact on their way of thinking about energy-related policy measures, e.g. the Fit-for-55 negotiations. We paid attention to this in our analyses, e.g. by always reflecting on the time an interview was conducted while coding or doing further analyses.

Figure 1 through Figure 3 report on the final composition of the sample. Our sample contains seven bureaucrats, thirteen parliamentarians or experts from their team, ten policy experts in consulting or think tanks, six people in environmental organizations who are working on the European Emissions Trading Scheme and three lobbyists on all the different case levels.

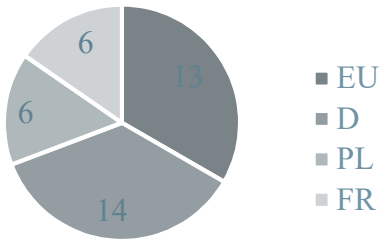
Figure 1: Role



Source: created by the authors

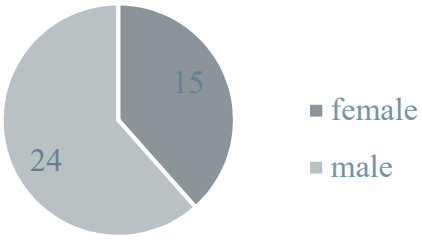
We collected thirteen interviews at the EU level, fourteen interviews in Germany and six interviews each in France and Poland (Figure 2). As the whole ETS policymaking community is very male-dominated, we decided to choose an interview with a woman if there was a choice between two equally qualified experts in an institution. Yet, most ETS policy expert positions are filled by men, thus our sample contains 24 male and 15 female interview partners (Figure 3).

Figure 2: Country



Source: created by the authors

Figure 3: Gender



Source: created by the authors

In *Germany*, we were able to reach our goal of interviewing parliamentarians from all parties as well as ministerial bureaucrats from the different departments and ministries and people from different interest representations.

On the *EU level*, it was particularly difficult to get in touch with commission officials as they were very busy with the policymaking in the Fit-for-55 process. Once this process was finished, however, we were able to conduct several insightful interviews with them. In both cases, we fully satisfied our data collection aims.

In *Poland*, gaining access to parliamentarians and bureaucrats proved to be very difficult. We received no responses to emails and calls were unsuccessful. Apparently, language was much more of a barrier in Poland than in the other three realms. This was especially the case when dealing with many Polish parliamentary staff to MPs who primarily communicated in their native language. Given this challenge in reaching Polish MPs and bureaucrats, we enlisted the help of a contracted PhD scholar from a Polish university to conduct interviews in Poland. His proficiency allowed us to bridge the language barrier, allowing us to secure and conduct one interview with a Polish parliamentarian and one with a bureaucrat. Thus, while we don't have interviews from all political parties, we do at least have perspectives from both the government and the opposition.

In *France,* due to the national elections, the composition of parliament changed just as we started interviewing. Initially, we tried to approach those parliamentarians who were re-elected, but our attempts were unsuccessful. Then we reached out to those who had been elected out of office but had served during the period of our interest in legislation until 2021 to learn from their expertise over the past years. Unfortunately, this endeavour also proved fruitless. We then contacted all MPs who were newly elected into office without any success, even after trying communication in French, including phone calls by a team member fluent in French. Even asking if a parliamentarian assistant would be available proved unsuccessful. Despite multiple and repeated attempts via email and phone calls to former and recent MPs' offices, we were unable to secure an interview. This was in stark contrast to Germany, where many MPs delightedly accepted our request, considering this kind of task as one of their duties as parliamentarians. This culture does not seem to exist in France. Thus, unfortunately, the data set does not cover the perspectives of French parliamentarians.

Table 3 displays the final composition of the samples within the four selected cases.

Table 3: Sample Composition

	EU	Germany	Poland	France	total
Bureaucrat	2	3	1	1	7
Parliament (incl. Experts, MEPs)	5	7	1		13
Consulting & Think Tank	3	3	1	2	9
Environmental Organization & NGO	2	1	2	2	7
Lobbyist	1		1	1	3
total	13	14	6	6	39

Source: created by the authors

3. Data Analysis

The interviews were coded using qualitative content analysis based on Mayring (2021), which allows us to reduce the material on deductive preliminary assumptions as well as staying open to inductive unexpected insights. This method reduces extensive unstructured textual data to structured information (codes), which is a good starting point for subsequent interpretive analysis, e.g. critical discourse and narrative analysis approaches (Fischer et al., 2007), mapping the different "storylines" being told around the policy instrument and extracting how instrument perceptions are connected to the policymakers' core beliefs.

A codebook was developed, covering the overarching categories and several subcodes listed in *Table 5: Codebook* (see Annex). Furthermore, definitions of the codes as well as anchor examples were added in order to make the codebook intersubjectively understandable. The code categories were theoretically derived from the overarching themes that had already structured the questionnaire and were derived from the literature. Pre-defined deductive codes encompassed the themes of the interview and are included in the overarching categories in the left-hand column of Table 5. Their order is based on the order of the questionnaire and, approximately the course of the interview. They include the objectives of climate policy actors, their preferences for instrument selection, the interactions between the instruments they mentioned, their specific perceptions of the EU ETS, the MSR and the Fit-for-55 negotiations and the role of social policy. Two overarching code categories that are less self-explanatory are 'meta' and 'actor position'. These are overarching in terms of ideological attitudes to climate change,

but also in terms of perspectives on the policy-making process. ‘Actor position’ includes all the statements that actors make about themselves and others, and thus the analytical base for the analysis of the actors’ self-perception and -representation, and external perception. Moreover, a majority of the codes in the second column of the table were deductively derived from the interview questionnaire. They served to cover topics about which we knew in advance of the data analysis, as we had specifically asked about their occurrence in the interviews. These include, for example, ‘sources of information’ and ‘perceptions of EU climate policy’.

This first round of coding was executed mostly using the aforementioned deductive codes. Nonetheless, the coders still aimed to maintain a certain openness to the material (Mayring, 2021, Saldaña, 2013) and some new codes were added inductively. Their addition to the codebook was preceded by careful consideration and discussions in the team. The codebook in Table 5 displays these inductively derived codes as well. The inductive subcodes encompass topics that were identified during the initial coding of the interviews and that were observed across multiple interviews. For instance, the subcode ‘MSR – insufficient knowledge’ encompasses statements made by the interviewees in which they acknowledged a lack of familiarity with the MSR, hindering their ability to respond to questions. Another inductive code, namely, ‘national perspectives’ was added following the same logic. The inductive subcode ‘(non-)reflection of their own positioning in the system’ refers to recurring statements in which actors make statements about themselves and their own positioning. It differs from the other code ‘actor self-description’ in the reflection of the interviewees' own positionality. In the last overarching category that we called ‘other’ we collected codes that emerged during the coding process and did not fit into any of the overarching categories. However, we considered these codes to be potentially relevant and therefore decided to document them for potential subsequent analyses, e.g. references to the role of financial market actors.

To support consistent coding across different coders, we regularly discussed codes and coding procedures. We started with an initial discussion before coding to align our mutual understanding of codes. We continued this discussion during the coding process on a regular basis. We were effectively able to develop a common approach to coding with a coder-inter-reliability of 69%. The organisation and documentation of our analysis were based on Reyes et al.’s (2024) suggestions for a ‘living codebook’.

This previously presented first coding round served to sort the material according to relevant topics. It represents a basic coding of and served as a first familiarization with the large amount of interview material. We used the coding as a basis for further analyses for the papers resulting

from the research project. These papers approached the interview material with specific research questions and interest in partial aspects of the material. Based on the initial coding, it was possible to access all the passages relevant to these sub-aspects. These passages were then analysed in more detail in various ways for the individual papers. The description of these further analyses is available in detail in the method sections of the respective papers. Interested readers can follow up on these in the publications that have emerged from the project (cf. Gerstenberg, 2024; Gerstenberg & Schnapp, 2024; Zimmermann et al. 2024).

4. Data storage and access to externals

The data is stored in the University's data repository "FIS – Forschungsinformationssystem". As the interviews contain sensitive personal information, the data is not publicly available. We take this restrictive approach to releasing the data as it contains confidential information and full anonymity of the interviewees needs to be ensured.

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6. Annex

Table 4: List of Interviews

No.	Date	Interviewer	Role	Level	Place	Language
1	08.04.2022	Prof. Dr. Kai-Uwe Schnapp Dr. Johannes Jarke-Neuert	Bureaucrat	Germany	Zoom	English
2	27.04.2022	Anne Gerstenberg	Consulting	EU	Zoom	English
3	05.05.2022	Prof. Dr. Kai-Uwe Schnapp Dr. Johannes Jarke-Neuert	Think Tank	Germany	Zoom	English
4	12.05.2022	Anne Gerstenberg Ella Karnik Hinks	Consulting	Germany	Zoom	English
5	24.05.2022	Anne Gerstenberg Ella Karnik Hinks	Administration	Germany	Zoom	English
6	10.06.2022	Anne Gerstenberg Ella Karnik Hinks	Environmental Organization	EU	Zoom	English
7	16.06.2022	Anne Gerstenberg	Parliament	Germany	Zoom	German
8	23.06.2022	Anne Gerstenberg	Environmental Organization	Germany	Zoom	English
9	23.06.2022	Anne Gerstenberg	Think Tank	EU	Zoom	English
10	29.06.2022	Ella Karnik Hinks	Think Tank	France	Zoom	English
11	06.07.2022	Ella Karnik Hinks	Think Tank	France	Zoom	English
12	13.07.2022	Anne Gerstenberg	Parliament	Germany	Zoom	English
13	13.07.2022	Anne Gerstenberg	Bureaucrat	France	Zoom	English
14	14.07.2022	Anne Gerstenberg	Think Tank	EU	Zoom	English
15	21.07.2022	Ella Karnik Hinks	Think Tank	Poland	Zoom	English
16	26.07.2022	Ella Karnik Hinks	Think Tank	EU	Zoom	English
17	25.08.2022	Ella Karnik Hinks	Parliament	Germany	Zoom	English
18	01.09.2022	Ella Karnik Hinks	Lobbyist	France	Teams	English
19	02.09.2022	Ella Karnik Hinks	Bureaucrat	Germany	Webex	English
20	12.09.2022	Anne Gerstenberg	Parliament	Germany	Zoom	German
21	16.09.2022	Anne Gerstenberg	Lobbyist	EU	Zoom	English
22	10.10.2022	Ella Karnik Hinks Anne Gerstenberg	Parliament	EU	Zoom	English
23	10.10.2022	Anne Gerstenberg	Parliament	Germany	Zoom	German
24	15.11.2022	Anne Gerstenberg	Parliament	Germany	Zoom	English
25	17.11.2022	Anne Gerstenberg	Lobbyist	Poland	Zoom	English

26	17.11.2022	Anne Gerstenberg	Environmental Organization	Poland	Zoom	English
27	18.11.2022	Anne Gerstenberg	Environmental Organization	Poland	Zoom	English
28	30.11.2022	Ella Karnik Hinks	Parliament	EU	Zoom	English
29	02.12.2022	Anne Gerstenberg	Parliament	EU	Zoom	English
30	23.12.2022	Anne Gerstenberg	Parliament	Germany	Zoom	German
31	11.01.2023	Ella Karnik Hinks Anne Gerstenberg	Bureaucrat	Germany	Zoom	English
32	17.01.2023	Ella Karnik Hinks Anne Gerstenberg	Parliament	EU	Zoom	English
33	25.01.2023	Ella Karnik Hinks	Bureaucrat	EU	Zoom	English
34	02.02.2023	Anne Gerstenberg	Parliament	EU	Zoom	English
35	06.03.2023	Anne Gerstenberg Ella Karnik Hinks	Bureaucrat	EU	Teams	English
36	17.03.2023	Ella Karnik Hinks	Environmental Organization	France	Zoom	English
37	21.03.2023	Ella Karnik Hinks	Environmental Organization	France	Zoom	English
38	26.04.2023	Wojciech Wereszko	Bureaucrat	Poland	Zoom	Polish
39	28.04.2023	Wojciech Wereszko	Parliament	Poland	Zoom	Polish

Source: created by the authors

Codebook (deductively developed codes)

Table 5: Codebook

Category	Code	Description	Example
Actor position	Actor self-description	Responses to the question: How does your daily work relate to climate policy and climate action?	*"I'm a researcher at a think tank consultancy working on climate change. So, basically my entire work life has been on climate change, with a bit of energy. But the main focus is actually European climate policy, not so much energy policy"* (Interview 3, DE, Think Tank, 2021, Pos. 4)
	View of other actors	Statements made by one actor about other actors and their positions in the field	*"Another one is the actors. I would say that when it comes to consumers, there's a lot less rational decision-making on cost effectiveness or so when people make their personal choices"* (Interview 3, DE, Think Tank, 2021, Pos. 38)
			"And personally, I think that Fridays For Future and Greta did a great job in moving the perception from 'okay, we want to be at 2% or two degrees' now to be at 1.5 degrees and everybody now talks about 1.5 and nobody talks about below two" (Interview 4, DE, Consulting, 2022, Pos. 17)
Climate policy goals	Policy objective	Statements that reveal the actors objectives in climate policy	*"... the objective is pretty clear. It's to reach a climate neutrality and net zero by 2050. That's the key objective. And these instruments are the ways to get there"* (Interview 21, EU, Consulting, 2021, Pos. 35)
	Perception of climate policy in general	Policy core beliefs: normative and empirical beliefs concerning policy subsystems	*"I think it's no secret electricity is probably the center of decarbonization. We need to electrify the economy in order*

Category	Code	Description	Example
			to decarbonize the economy" (Interview 21, EU, 2022, Consulting, Pos. 4)
	Perception of EU climate policy	Any statement that evaluates the current EU climate policy	*"I think overall the EU climate policy does-, well, it's fairly comprehensive, it does a good job of that. Of course, there are political compromises that occur in the making of policy. But I think they've done a fairly good job overall"* (Interview 2, EU, Consulting, 2021, Pos. 7)
			"Generally speaking, of course it could always be more ambitious" (Interview 12, DE, Parliament, 2022, Pos. 9)
Instruments preferences	Preferred climate policy instruments	Overarching code to the question: which instruments do you prefer?	*"... every country will have a different set of policies and a different policy design. And that needs to be taken into account in order to avoid perverse outcomes and to increase the overall efficiency and effectiveness of the system. So, obvious ones like removing countervailing fossil fuel subsidies or providing upfront financing assistance for technologies and where there's barriers to research, development or deployment. There are obvious ones "* (Interview 2, EU, Consulting, 2021, Pos. 41)
	Instruments to avoid	Instruments that are to be avoided in the interview partner's eyes	*"... if you ask me, there is an instrument that I would not want, that is the whole taxonomy, what do they call it? Defund it"* (Interview 9, EU, Think Tank, 2022, Pos. 39)

Category	Code	Description	Example
	Objectives/characteristics/effects of instruments	The "criteria" an instrument should fulfil in the eyes of the interview partner	*"They have to be effective, they have to provide the right incentive or provide the right impact, that they achieve the emission reductions they are intended to. Then they should be as efficient as possible but effectiveness is more important, I guess. They have to be accepted, so acceptable for the public, for the voters, because otherwise, they won't be sustainable"* (Interview 5, DE, Administration, 2022, Pos. 35)
			"So, first is to have these long term and short term perspectives or well-set targets, but the second, most important criteria is that you need this instrument in forced action now, otherwise you'll have kind of a penalty. So, it needs to be a carrot and stick" (Interview 27, PL, Environmental Organization, 2022, Pos. 31)
Instrument interactions	Perception of instrument combinations	Actors describe how instruments should be best combined in a policy mix	*"I think where there's obvious potential gains, it seems like, okay, greater interconnection in the electricity grid, like you're still seeing fairly large price differentials in different regions, in wholesale markets, which suggests that there's fairly large gains from trade"* (Interview 2, EU, Consulting, 2021, Pos. 39)
			"I think there's not a single instrument that's going to solve our problem. So, I don't subscribe to the 'carbon price will fix everything'-approach. And I think every sector is quite different. So, I think we need a specific policy instrument for

Category	Code	Description	Example
			each sector. And they can supplement each other" (Interview 3, DE, Think Tank, 2021, Pos. 38)
	Mixes to avoid	Instrument combinations that should be avoided	*"So this combination of regulatory law and emissions trading is simply unnecessary. If you have greater ambitions to protect the climate, then you reduce the cap and let the market do it"* (Interview 20, DE, Parliament, 2022, Pos. 21)
	Unaware of negative interactions	Actors express that they are not aware of any negative interactions between the ETS and other instruments	*"No. Actually, I can't think of any specific combination. [...] I mean, it's even possible to combine carbon taxes and emissions trading and some member states are doing it. If there's a compromise for an emissions trading system with a certain ambition leading to a certain price level, then there are certain member states which are even more ambitious and put an additional price on carbon to get an even higher price overall. So, those policies definitely need to be kind of coordinated, but it's possible to combine. Actually, I haven't thought [about it], I don't know if you have a list of examples"* (Interview 33, EU, Bureaucrat, 2023, Pos. 15-16)
	Instrument interactions - impact on total emissions	Actors speak about the interrelation between the ETS and national climate policy instruments especially in regard to the fact that national instruments do not have an impact on total emissions	*"Because the coal phase-out actually, let's just say so, has no national influence on the CAP and thus has no influence on ... no climate effect. But ultimately, it only has a price effect, purely in Germany" (*Interview 20, DE, Parliament, 2022, Pos. 18)

Category	Code	Description	Example
	Interaction between ETS and coal exit	Positions formulated about the interaction between the ETS and the German coal exit	*"I: So, some would say that incentivizing abatement by the ETS and a mandatory coal phase out to contradict each other. What would you say about that?* *B: I do not agree. I know that there's this debate. But I do not agree"* (Interview 5, DE, Administration, 2022, Pos. 45)
EU ETS	Perception of the ETS	The expressed perception of the EU ETS	*"I think it's an essential part of achieving EU climate goals. I know there is some debate about its efficacy and its ability to drive emissions reductions to date. However, well, I think it's obvious that if you have a reasonable price incentive that is coming out of the emissions trading system, then it is driving de-carbonization"* (Interview 2, EU, Consulting, 2021, Pos. 13)
	ETS - criticism and improvement suggestions	All statements that express criticism toward the functioning of the ETS and how they would like to change it	*"Another blank in the EU policy is addressing non-CO2 emissions from aviation. So, the CO2 emissions from aviation are only one third of the climate impact. Two-thirds is cloud formation and then other impacts on methane, ozone, and so on in the atmosphere. And these two thirds of aviation emissions are still not addressed in any regulation or other mechanism, no pricing, no regulation. So, that is a big blank spot still in the ETS"* (Interview 3, DE, Think Tank, 2021, Pos. 58)

Category	Code	Description	Example
	ETS - price stability	Statements on the importance of price stability or Price Stabilization Mechanism in Article 29a	*“Frankly, I don't think article 29a is an effective mechanism. Like, we looked at it as part of the MSR review and it’s too slow, it's too blunt, it's poorly calibrated. Yeah, I don't think it'll have much of an impact. I think there's better tools that you have in your toolkit than article 29a"* (Interview 2, EU, Consulting, 2021, Pos. 17)
MSR	MSR general	This code refers to all statements that are made about the MSR: its general design and its role in instrument interactions (to be subclassified later)	*“I think it is an important instrument because we have seen how important it was in the last two years where it didn't work as we wanted it to work. So, there were too many certificates on the market, the price was low. And that led to an almost completely inefficient or effectless ETS in the first few years. And so, that's a big task for the MSR to achieve”* (Interview 12, DE, Parliament, 2022, Pos. 37)
	MSR - role in policy interactions	Role of the MSR in policy interactions	*“... in theory, the cap is set in line together with the other targets, like energy efficiency, like renewables. And in theory, if all goes well, then we'd have synergies between these headline targets which are important in the sector, energy efficiency, renewables and ETS. But reality is always different than modelled, when the cap was proposed in the pathway. So, we have seen that with the economic crisis in 2009, we have seen this with Corona. We have faster deployment of renewables maybe then foreseen in older modelling. So, basically, the MSR can ensure that the ETS stays ambitious and keeps working, even if external*

Category	Code	Description	Example
			circumstances are different than envisaged beforehand. So, it's a safeguard against the oversupply in the ETS" (Interview 3, DE, Think Tank, 2021, Pos. 42)
	MSR - not enough knowledge	Whenever actors express their limited knowledge about the MSR	*"It's a bit too specific for me. So, I can't really say anything. I think one of your colleagues has to brief me on that, they do a lot of work"* (Interview 4, DE, Consulting, 2022, Pos. 29)
	MSR - improvement suggestions	Suggestions on how the MSR should be reformed	*"For us, there are two main considerations. One is the withdrawal rate, [...] we have long suggested a 36% withdrawal rate[...]. We saw that even with 24%, the market stability reserve would not be able to keep up or at least that there's like a continuous oversupply of somewhere between one and two billion allowances on the market, which we think should be dealt with sooner rather than later. [...] The second aspect for us is the level of the thresholds, which we believe should be corrected in line with decarbonization of the power sector or the necessary decarbonization of the power sector.[...]We have been arguing that these thresholds should go to zero by 2030. So that basically you don't, as soon as there is oversupply, the MSR starts to absorb, you don't leave something on the market"* (Interview 14, EU, Environmental Organization, 2022, Pos. 36)

Category	Code	Description	Example
Fit-for-55	Fit-for-55	Every statement that refers to the Fit-for-55 reform process	*"I think, generally, the EU Fit for 55 is good. And a good thing and very important. It's a question of how to implement"* (Interview 23, DE, Parliament, 2022, Pos. 15)
	Fit-for-55 - ETS revision	Every statement that refers to the renegotiations of the ETS during the Fit-for-55 reform process	*"In the course of the Fit for 55 package and the new target definition, a stronger reduction path has now been introduced. Because it has just been said that we have to tighten up the targets in this area as well. So I think it's no longer just two comma two percent per year reduction, but 4.1 or 4.2. In other words, a much greater reduction in emissions is envisaged if the package is implemented in this way"* (Interview 20, DE, Parliament, 2022, Pos. 15)
	Fit-for-55 - MSR revision	Every statement that refers to the renegotiations of the MSR during the Fit-for-55 reform process	*"... my one main disappointment is that they didn't implement that safety valve mechanism in the MSR to mitigate the risks of, let's say, counterproductive interventions from the MSR in the system"* (Interview 2, EU, Consulting, 2021, Pos. 53)
	Fit-for-55 - ETS2	All statements that cover the plans for the ETS2 if brought up by interview partners	*"And the idea is to extend the ETS 1 to an ETS 2 for other sectors like transport. So, road transport and building sectors are not a bad idea. But it should not be the compliance instrument. This should be a backstop instrument and a warning system instrument. And it shouldn't replace the*

Category	Code	Description	Example
			ESR[1], the effort sharing regulation or something else, climate action regulation, which should stay the compliance instrument in our view" (Interview 8, DE, Environmental Organization, 2022, Pos. 33)
	Fit-for-55 - CBAM	All statements that cover the plans for the Carbon Border Adjustment Mechanism (CBAM) if brought up by interview partners	*"I think it's good that the EU is pursuing a carbon border adjustment, even if it is very hard to implement and may not even be implemented long term who knows, right, but it is driving actual change in behavior in EU's trading partners, right"* (Interview 2, EU, Consulting, 2021, Pos. 52)
Social policy	Social policy	Knowledge and consciousness of actors for and about the interlinkage between climate policy and social policy and which narratives are told about social costs/effects of climate policy	*"And especially when we are looking at sectors that directly affect consumers, you know especially housing and transport, these are - or also potentially food prices - these are all sectors where people will feel badly designed climate policies quickly. So, it is important that you have designed your climate policies, or you're accompanying social policies in a way to minimize negative impacts. And there you really need to focus on the lowest income groups"* (Interview 3, DE, Think Tank, 2021, Pos. 44)
	Why it matters	Reasons and justifications for social policy	*"... bad policy, which could in theory reduce emissions but would then lead to a lot of resistance in the sector or in the general public, will not be helpful in the medium to long*

[1] ESA - Effort Sharing Regulation

Category	Code	Description	Example
			run. So, having a very high CO2 price for road transport and heating for example, would likely lead to a lot of resistance. We have seen the yellow jackets in France as extreme case" (Interview 3, DE, Think Tank, 2021, Pos. 34)
	Preferred social policy instruments	Preferred social policy instruments	*"I think, especially when you look at the situation in the housing sector, that you see, for example, that the housing allowance is also linked to the situation of the flat. So that it must be an incentive for landlords to provide a well-rehabilitated flat. So that, on the one hand, emissions are reduced, but on the other hand, costs are also reduced"* (Int0023, DE, Parliament, 2022, Pos. 92)
Meta	Meta-beliefs	Deep core beliefs: fundamental normative orientations	"*I'm kind of sceptical that the green growth narratives [...] will lead us anywhere"* (Interview 24, DE, Parliament, 2022, Pos. 67)
		Policy core beliefs: normative and empirical beliefs concerning policy subsystems	"*I think it's no secret that electricity is probably the center of decarbonization. We need to electrify the economy in order to decarbonize the economy"* (Interview 21, EU, Consulting, 2022, Pos. 3)
		Secondary beliefs: instrumental beliefs or beliefs about a subset of a policy subsystem	"*I want to support the expansion of effective climate policy, and my view is that core part of that is effective carbon pricing systems that are able to create incentives for reducing emissions of course"* (Interview 2, EU, Consulting, 2021, Pos. 9)

Category	Code	Description	Example
	(Non-)reflection of their own positioning in the system	Every statement that reflects their own position in the discourse and their (un-) awareness of these	*"I'm a small wheel in the whole system"* (Interview 5, DE, Administration, 2022, Pos. 11)
	Sources of information	How do you get informed about recent developments in the realm of climate policy?	*"It's primarily from like Carbon Pulse, I would say like in terms of, if I'm following the day to day politics of what's changing, well they are a pretty good news source"* (Interview 2, EU, Consulting, 2021, Pos. 57)
	Important occasion	Has there been a special occasion in your life that shaped your thoughts about climate change?	*"I guess there've been many, because I've been working on this for so long, but I wonder what to highlight now. Maybe the Copenhagen Climate Conference, which was actually the first UNFCCC meeting I went to"* (Interview 14, EU, Environmental Organization, 2022, Pos. 41)
	Frustration	When actors mention the frustration they experience throughout their work in climate politics	*"It's not, it's not even frustration, I am AFTER frustration already. I had this frustration for a couple of years but now, it's just a fact"* (Interview 27, PL, Environmental Organization, 2022, Pos. 17)
	Knowledge exchange	This code refers to statements where interview partners speak of their experiences or perspectives on knowledge transfer, including science communication, exchanges of information/knowledge	*"Theoretically, one person can be of the opinion that such an instrument is simply the most cost-effective and efficient instrument. If no one else understands this except the academic brain, then you have lost"* (Interview 20, DE, Parliament, 2022, Pos. 29)

Category	Code	Description	Example
	Environmental vs. climate policy	Here are all statements, that express the view and definition of climate policy,environmental policy and their relation	*"The task of environmental policy, at least from an economic perspective, is precisely this internationalization of externalities. Whether you do that with the price or with the other instruments is only a question of the costs that arise in the end. In this respect, I would say, climate and environmental policy, i.e. environmental policy, is the generic term. And climate policy is part of environmental policy"* (Interview 20, 2022, DE, Parliament, Pos. 43)
	National perspective	Statements relating to an actor's specific national situation	*"And it's funny, because in Germany, normally, I have the feeling that there's a big consensus that this is actually the right instrument, and it's actually a good thing to have an ETS2"* (Interview 32, EU, Parliament, 2023, Pos. 20)
Other	Financial players in the EU ETS	Statements about the role of financial players in the ETS	*"And the other aspects are to limit speculators from participating in the market, which also seems to be notoriously difficult to implement. Just because you don't have a clear definition of what is the speculator and how do you limit their participation to the market?"* (Interview 14, EU, Environmental Organization, 2022, Pos. 27)
	Effort sharing	Statements referencing the Effort Sharing Regulation	*"I think the effort sharing regulation, the climate action regulation, the one that's governing non-ETS emissions, has many issues that need to be resolved. Still, in the Fit for 55 proposal, it doesn't really address that"* (Interview 3, DE, Think Tank, 2021, Pos. 7)

Category	Code	Description	Example
	Political constraints	Statements about the (perceived) political constraints to the success of certain policy instruments	*"... it's easy to say, if you look at different instruments, 'well, we should combine them'. But that's not feasible because the institutions and the structure there make it really difficult for them to combine"* (Interview 4, DE, Consulting, 2022, Pos. 25)

Source: created by the authors