

CAN CBAM SOLVE THE EU ETS CARBON LEAKAGES?

- A Stakeholder Perspective

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Summary

The paper deals with the proposed solution to the problem of carbon leakage in the European Union Emissions Trading System (ETS). The ETS aims to create economic incentives for CO₂-intensive businesses to reduce their greenhouse gas (GHG) emissions. But despite the positive mitigation effects, the problem of carbon leakage remains. To solve that problem, the EU is trying to come up with a new policy approach, a carbon border adjustment mechanism (CBAM). The implementation of CBAM, however, is heavily dependent on the stakeholders involved and the need to reach a compromise between conflicting interests. This thesis aims to identify and highlight possible grounds for conflict and compromise. It does so, first, by examining the discourse patterns in the reactions of main stakeholders to the proposed solutions for carbon leakage by the European Commission. Second, the thesis explores whether these discourse patterns are linked to the underlying interests of the stakeholders. Theoretically, the thesis combines Yang et al.'s Stakeholder analysis of EU ETS and Görlach et al.'s classification of stakeholders' and their interest, both combined and based on Sabatier's Advocacy Coalition Framework, to analyze actors' reactions to the CBAM policy. Methodologically, the research is based on a qualitative content analysis of an EU survey that reveals the position of the stakeholders and makes it possible to identify similarities and differences in their underlying interests. The focus is on the examination of position papers, public reactions, and possibly other statements from stakeholders in the ETS debate.

1. Introduction and Relevance

1.1. Carbon Leakage in the EU ETS?

Climate change is not a new or unknown threat to humans. It has been known and widely acknowledged for many decades that the earth is heating up and that this temperature rise will lead to catastrophic global changes. For almost as long, scientists have also known what and who is driving climate change: Greenhouse gasses (GHS) produced and emitted by humans. Stopping these warming processes is the stated goal of almost all countries and governments, and concrete steps to achieve this have been agreed on at least since the Kyoto Protocol (1997).

The EU is one of the largest emitters of GHG, Behind China and the USA is it the third largest global polluter (US Environmental Protection Agency 2023). To meet the ambitious climate protection goals, the EU implemented a new policy in 2003. The world's first international Emissions Trading System (Directive 2003/87/EC). The ETS came into force in 2005 and has since been revised four times. It is now in its fourth phase and is based on a market-oriented cap and trading system that aims to create an economic incentive for CO₂-intensive businesses to reduce their GHG emissions (Ruf 2017, 1). Currently, the ETS covers about 40% of total EU-wide emissions (Laing et al 2013, 2), which, based on various studies, seems to have an impact on decreasing EU emissions (Bayer and Aklin 2020, 8807). Despite the decreasing emissions, a positive effect of the ETS cannot necessarily be proven, partly as a result of carbon leakages which "arises when reductions in emissions from countries applying the tax are offset, partially or completely, by increases in emissions from countries not applying the tax" (Henderson and Verma 2021, 4) When carbon leakage occurs a decrease in emissions allocated within the EU is then connected to an increase in other areas.

1.2. Research Relevance

This problematic phenomenon has been addressed by the EU with the latest provisional revision of the ETS policies from 2021 (COM (2021) 564 final), which has not yet entered into force but is to be implemented by the end of 2023. Various ex ante calculations predict leakages with rates between 10% to 30% (Naegele and Zaklan 2017, 4) and as the EU raises its own climate ambition the risk is about to increase (EU Commission). As Yang et al (2010, 82) argued for an earlier phase of the ETS policymaking process "As a public policy, the [new Directive] is the outcome of democratic consultation among the stakeholders" (The new policy is about to be implemented, but for the final design of the policy it is important that a compromise can be found between all actors (Buylova et al 2022, 2), as different actors try to realize their interests and goals, especially through public responses, lobbying and advocacy groups (Markard and Rosenbloom 2020, 1094).

This is where the research aim of this paper originates. The EU's new proposed CBAM policy (COM (2021) 564 final) aims to implement new regulations to prevent carbon leakages in a way that "imported products are subject to a regulatory system that applies carbon costs equivalent to those that otherwise would have been under the EU ETS" (COM (2021) 564 final). The new policy is the compromise reached in the preceding deliberation process and is the starting point for the study. The latest progress in the deliberation processes will be examined, starting from the policy measure itself, analyzing the actors involved. It will also look at the kind of arguments they used in the position papers, how they are different or related, the kind of discourse patterns found and how these feed and relate to the interests that are shown in the different stakeholder papers.

Not only is this process current and of interest to the scientific, economic and political communities, but it is also of high societal relevance, as optimizing the ETS is a major step towards climate protection. Many stakeholders across sectors see the cap-and-trade system as the best policy instrument to stop climate change (Markard and Rosenbloom 2020, 1092). This paper aims to make a relevant contribution by identifying and highlighting possible grounds for compromise and change. Involving stakeholders in the deliberation process not only creates opportunities but also threats to the success of the policy. It could be weakened by too much influence from those who only follow their own interests. To overcome these risks, it is necessary to investigate the interests and the arguments of various stakeholders.

To establish the scientific relevance of the paper the existing literature in this field was examined, with the result that it is mainly concerned with either the deliberation processes or the potential influence of the different actors. This paper, however, combines the theories of discourse patterns (Görlach et al, 2018) and stakeholder interests (Yang et al. 2010) into one approach. Making it possible to study the actors' interest in the debate by examining the discourse patterns in the arguments. In this way, it becomes possible to gain a better understanding of how and if the actors follow specific interests. The aim is not only to combine the theories, but also to test them empirically to see if they stand up to being applied to a particular policy case. Both theories are rather abstract and thus the adaptation to the CBAM debate is an extension. Moreover, both theories originated in the 2010s and are therefore no longer contemporary. It is therefore important to assess if and how the theories still reflect the stakeholder interests and discourse structures. The overall aim is to gain an overview of whether the theories hold and if they are useful when it comes to analyzing the ongoing debate around the new CBAM policy in terms of the underlying coalitions, discourse patterns and interest structures.

1.3. Question and sub questions

To conduct a structured and targeted analysis, the goal is to answer the following research question:

How do the policy positions of actors involved in the current CBAM debate correlate to previously established actor coalitions and corresponding discourse patterns regarding carbon leakage?

To answer the main question, it was broken down into two sub questions. One theoretical and the other empirical:

- *In what way can the actor coalitions defined by Yang et al. be assigned to the discourse patterns identified by Görlach et al.?*
- *How are the problem perceptions and discourse patterns of the stakeholders similar or different and can these be traced back to certain core interests?*

In the following, the theoretical and methodological framework guiding the answering process of the research question will be explained in depth.

2. Theoretical Framework

This paper draws mainly on the combination of two strands of literature. The Advocacy Coalition Framework, developed in 1988 by Paul Sabatier, provides a framework for examining the belief systems behind policy changes and the role that actor coalitions play in them.

A paper by Yang et al. (2010) that uptakes this framework and applies and extends it to the specific policy case of the EU ETS. And a theory by Görlach et al (2018), developing a classification that sorts the interests of different stakeholders in relation to carbon leakage into four different discourse categories and thereby opens the way to investigate the reaction to the proposed solutions.

The combination of the theories is the groundwork for this paper as none of the theories fulfill the scope of the research by itself. Hence it is necessary to test and develop them together. From Sabatier to Görlach, the approaches are complementary and narrowed down from rather broad to very specific and catered for the examined policy case. A more in-depth overview of the theories will be given in the following chapter.

2.1. The interest requirement of the advocacy coalition framework

The Advocacy Coalition Framework Theory provides the basis for the paper in the sense that it defines the grouping of the different actors into advocacy coalitions and outlines how policy change is impacted through the interaction of these different coalitions. The interaction is based on belief systems, and the goal of the actor coalitions is to translate their beliefs into public policies. According to Sabatier, such a coalition is "composed of people from various organizations who share a set of normative and causal beliefs and who often act in concert" (1988, 133). These coalitions are not formal organizations, but a loose collection of groups, consisting of public and private actors, that share a common opinion and a similar goal on a particular policy issue and are actively involved in the issue (Sabatiere 1988, 131).

In the context of this paper, it is expected that this will be the various yet-to-be-identified positions on carbon leakage and its solutions that motivates actors to form advocacy coalitions. Their aim is to translate their beliefs and goals into public policies (Sabatier 1988, 142). The focus of the theory is the belief system of the different coalitions, defined as the most important interests or the deep core,

which may not be the same for all actors, but is similar in the key issues related to the policies; and how these are then reflected in the policies (Sabatier 1988, 143 ff.). In their paper, Yang et al. place value priorities or, as they formulated it, "interest requirements" at the center of their analysis.

In an earlier step the advocacy coalition framework was taken up by Peterson (2003) and applied to environmental policy debates in the EU, where he described two main competing advocacy coalitions that were "broadly advocating environmental protection vs. industrial interests - for influence within EU environmental policy networks" (Peterson 2003, 6). It was then further explored by Yang et al. (2010), who identified the key stakeholders in the EU ETS debate. These groups are directly involved in the design and implementation of the ETS and are affected by its impacts (Yang et al 2010, 83). This paper will follow the theoretical strand and examine the discourse around the newly proposed EU CBAM policy, to gain a deeper understanding of how different actor coalitions position themselves in the debate, to explore if and how this is connected to their interest requirements. Stakeholders need to take action to influence the policy decision in a way that maximizes their benefits, based on their preferences (Yang et al. 2010, 82) regarding the outcome and design of the new CBAM policy. Yang et al.'s paper gives a broad definition of the underlying interest requirements of the actor groups, which drives their actions in the ETS policy process. Three of the stakeholder coalitions will be further analyzed in this paper:

1. Firstly, GHG emission companies, who are the main emitters and thereby object of the regulations (Yang et al 2010, 84). The main theme they identified for the GHG emission companies is "to pursue the maximization of economic benefits",
2. Secondly, the other key stakeholder group that is identified is the Public and Environmental protection NGOs, a coalition that is not directly involved in emissions trading but is concerned about its environmental impacts (Yang et al 2010, 85). The pro-environment Coalition, whose goal is to "seek for environmental effectiveness" (2010, 84)
3. And lastly governmental institutions, who are the heart of the implementation and who seek to find harmonization between contending interests. The governmental institutions are situated in between these two contradictory positions, as their goal is to achieve a "sustainable and harmonious development of environmental effectiveness, economic efficiency and social benefits" (Yang et al. 2010, 84).

A deferential elaboration of their interests is a goal of the analysis. The expectation at this stage is that the arguments adopted by the three actor coalitions involved will correspond to the broad interest requirements identified by Yang et al. This loose connection of the theories must be further explored, given that the diverse actors, even within a coalition, pursue very specific interests. Hence one aim of the paper is to expand the theory to provide a valid ground for the subsequent analysis.

Yang et al.'s theory on its own is not designed to explore the actors' interests in more detail. It only gives a rough direction to classify the different actors in the ETS debate into coalitions. Although the broad interests of these actors are part of the theory, it is not possible to determine them precisely with the actor coalition theory alone. This is where Görlach's theory comes into play. It gives a detailed outline of the different interests and problem perceptions in the debate. As only the two theories together fulfill the scope of the research, the aim of the thesis is to combine the two theories and to investigate and analyze them empirically.

Nevertheless, the data is analyzed openly to counteract possible research bias with the goal of developing a more comprehensive theory based on Yang et al.'s work in combination with Görlach et al. theory on CBAM actors discourse patterns. A probable result of the analysis could be that more actor coalitions need to be added to the theory, as other stakeholders may be identified to be part of the policy process.

2.2. Carbon Leakage Policy Discourse

In their paper, Görlach et al (2018) outlined an important foundation for identifying and examining the discourses patterns that are connected to potential carbon leakage solutions. They examined the discussion on carbon leakages, to understand which fundamental discourses underly it. More specifically, how and why the concept of carbon leaks is seen as a problem by different actors and what it implies. They were able to identify four different approaches (Görlach et al 2018, 16). The theory states that the foundation for the debate on carbon leakage and the resulting problem-solving approaches result from why and how carbon leakage is perceived as a problem by different stakeholders. They have identified four different discourse patterns, which they see as the initial point for the involvement and positioning of the various stakeholders in the debate. They argue that actors perceive the problem differently based on their interests and motivations, and that these perceptions guide their political actions. The differentiation based on the interest can be linked back to the one made by Yang based on interest requirements, as both set the same key motivations at the center of their categorization.

The theory relates to the debate on carbon leakage in the EU ETS system in general rather than to recent EU policy development and implementation processes. Hence, it is well suited as a basis for a coding scheme to test the theory in this specific policy debate. These four approaches will be transformed into four coding categories, which include the respective problem perceptions and the connected discourses patterns. The categories are:

1. *Carbon leakage as a problem of economic competitiveness*
This takes the view that carbon leakages disadvantage the global competitiveness of EU businesses, and therefore domestic climate policy has a negative influence on the competitiveness of European companies, compared to countries with lower climate policy standards. Paired with an overall more negative connotation of the EU ETS climate policy and economic focus.
2. *Carbon leakage as a problem for the effectiveness of climate policy*
Carbon leakage weakens environmental effectiveness as domestic emission reduction. Carbon policies are nullified through an increase in emissions in countries without or with less ambitious climate policies, which will lead to overall higher global emissions. Thus, the problem is that more GHG is emitted globally. This stands for an overall positive connotation of EU ETS with a focus on climate protection and consistency of climate policy.
3. *Carbon leakage and the (global) efficiency of climate policy*
The problem here is that carbon leakage results in a lack of environmental efficiency as uneven distribution of reduction approaches of GHG, due to gaps in the implementation of climate policies, raises the cost to achieve a global reduction goal. This view is associated with an overall neutral connotation of EU ETS climate policy and focuses on global cooperation.
4. *Carbon leakage and structural change towards deep decarbonization*
This discourse is future oriented; the problem of carbon leakage is perceived in a way that it hinders development of new technologies and damages the leading role of the EU in the field of GHG mitigation. Focus on leakage has a negative impact on the overall debate on climate protection, as it protects economies and leads to insufficient measures. Accompanied by an overall negative connotation of the EU ETS climate policy and structural change focus.

2.3 Junction of Theories

The approach has not yet been tested on a specific case, such as the evolution of the new CBAM policy in this study but is rather an abstract observation based on the examination of relevant literature and official actor statements. Since many different stakeholders are present in the debate, the aim is to analyze the actors and their statements regarding the new CBAM policy, to be able to allocate them to an actor coalition based on their interests. As these are not directly stated but translated into arguments in relation to the problem perception of carbon leakage and the possibility of CBAM to solve it, the discourse patterns are going to be the center of the study.

This loose junction of the two theories must be further explored, given that the diverse actors, even within a coalition, pursue very specific interests. Hence one aim of the paper is to expand the theory to provide a valid ground for the subsequent analysis. To achieve this the actor coalitions and interest requirements (Yang 2010) will be linked to the problem perceptions of carbon leakage (Görlach 2018) to determine if there is a strong relation between the interests of the different stakeholder groups and specific problem perceptions.

First actor coalition: the GHG emission companies

The first connection that can be made is between an actor coalition composed of GHG emission companies, as identified by Yang et al. Their main interest lies in achieving the maximization of profits and a minimization of cost. As the EU ETS already burdens them with higher costs through the cap and trade emission system, they fear that they will lose competitiveness through the CBAM as well. The overall topic is rather negative as many of the companies remain opposed to the ETS. This therefore fits with the first problem perception of carbon leakages as harming economic competitiveness, as this view also prioritizes economic aspects over environmental ones. Whether and how they also represent this position in relation to CABM must be determined and evaluated.

Second actor coalition: environmental actors

The second link is more difficult to establish, as different problem perceptions would fit the interests represented by the Environmental Protection Coalitions. The main attribution criterion is whether the actor has a positive or negative attitude towards the ETS. It should be positive if the stakeholder sees the EU ETS as a generally adequate means of combating climate change and thus carbon leakage as a problem that fits in either the second category effectiveness or the third one efficiency of the policy. On the other hand, there will also be actors in this coalition who see the EU ETS as basically ineffective. Then they may argue that carbon leakage is simply another factor that slows down the right and necessary structural changes that need to be made to protect the environment, thus following arguments from the fourth category. Which arguments prevail in the end is part of the analysis and can lead to different and unexpected results. However, what all actors in this coalition will have in common is that they will put the protection of the environment above the economy and profits.

Third actor coalition: governmental organizations

The different governmental organizations cannot be assigned to a specific problem perception based on theory, as their interests in relation to the EU ETS can be diverse and sometimes conflicting. The government, representing both environmental and economic development interests, may use patterns from all four discourse categories. They are in a conflict of interests and aim for harmonious development. Thus, it will be interesting to explore if economically oriented or environmentally oriented arguments prevail in these actor coalitions. This inconsistent position makes the analysis of this coalition particularly interesting, as no prior statements can be made and thus a new theory part could be developed.

The combination of these two theories is not only the answer to the first (theoretical) sub question but the guideline for the conducted analysis. To properly investigate the stakeholders' positions, their arguments will be analyzed through a specific coding scheme to examine if they fit into Yang's categorization and correspond in this matter with Görlach et al.'s (2018) discourse pattern approach. The starting point will be Sabatier's work on actor coalitions, which was further developed by Yang et al. to comply with the ETS process in the EU. Building on this, the actors are grouped, and their arguments analyzed. This is based on Görlach's theory to examine not only the argument but also the discourse structure. The goal is to investigate if and how the positions of the actors are reflected in the debate and if these follow certain patterns, connected to the overarching interests of the coalitions.

3. Methodology

For the analysis and to answer the research questions, a qualitative approach is adopted. To answer the questions, it is important to work very closely and in detail with the data and to examine it for underlying and often hidden information. The researcher takes on the role of an insider (Luton 2015, 10) who examines the relevant data with the help of the previously assessed theories. In particular, the context can be considered, and a precise interpretation can be performed, something that is missing in quantitative studies (Luton 2015, 10). The questions aim to identify discourse patterns in texts from different policy actors and to categorize and compare themes to draw conclusions about the applicability of the theory in the EU ETS debate. A descriptive research design was chosen, as the basic logic of the study is to work through the data with preformulated (deductive) categories (Mayring 2014, 12) to explore it through a theoretical lens. The actors included in the analysis can be roughly divided into three groups (according to Petersen, 2003 and Yang et al., 2010). These groups each aim to achieve a specific goal in relation to the EU ETS, carbon leakage and the new CBAM policy, and are expected to argue their interest in accordance with this. This classification corresponds to the EU categorization made at the last Consultation in 2020. The economic actors group includes trade federations, business associations, individual business and trade unions (COM (2021) 564 final). The environment group includes NGOs, citizens, think tanks and academic institutions. And the governmental related institutions' responses come from different levels of state and areas of responsibilities. The possibility remains that this categorization can't be upheld during the coding process, then alteration will be made, and actors will be reassigned to a different group or in the case of completely unfitting results, a new coalition needs to be added.

The main group of documents comprises the position papers, submitted by stakeholders to the EU questionnaire, as the questionnaire itself will not be part of the analysis. This included 212 written responses to the proposed policy. It is foreseeable not all of them will be suitable for the analysis, as for example some are not written in English or German. The criteria will be described further in the next section.

To gain an insight perspective, it is necessary to engage intensively with the published texts. To describe and interpret them are two important elements of qualitative text analysis (Vasimoradi and Snelgrove 2019, 1). These techniques are necessary to answer research questions, whereby the descriptive part will be more important than an abstract interpretation. The public reaction of different actors to policy documents of the EU on ETS and CBAM (as part of a survey conducted by the EU) will be the center of the examination.

3.1. Research Bias

A qualitative content analysis must follow certain standards to be considered scientifically. It is particularly important to overcome the bias of the research and to avoid errors that could affect the validity and reliability of the study. To accomplish this, the results and the coded analysis must be both accurate and constant (Creswell 2009).

According to Lacy et al., there are two strategies to being reliable and avoiding individual bias in the results and codes due to personal expectations and interpretations held by the researcher: “intracoder reliability, which involves a coder’s consistency across time, and intercoder reliability, which involves consistency across coders” (Lacy et al. 2015, 10). As the research does not involve a second coder the doable option is to achieve intercoder reliability by including a second independent coding round of a small data sample, after finishing coding the whole data. Due to the time limitations of the study, the possibility of including this extra step has to be decided at the end of the examination. Nevertheless, the highest level of attentiveness will be directed at ensuring that the coding and the interpretation of those is unbiased.

3.2. Data collection

The data set will be based on the documents described above. The first step will be to gain an overview of the stakeholders dealing with this issue and to assign them to one coalition according to their broad interests. Followed by the main analysis of their discourse structure, testing how the problem perception of different actors influences their position and argumentation. Data will be gathered from the EU's public consultations (2020) on the respective revisions of the ETS framework. The study is designed cross sectionally; the data was collected by the EU Commission during one specific period in time, July to October 2020, and was made publicly accessible. The aim of the study is to gain a deeper understanding about the state of interest and influence at a specific point during the policy development and not about possible change over time, thus an analysis of a small- and specific-time frame is most fitting. At this moment no more current data is available for the research, the process of passing the new EU policy has not included further hearing of actors so far, thus the data is up to date regarding the analytical purpose. These documents form the main data for the analysis, as they contain the views, reactions and proposals of the actors involved and these will be compared and analyzed for their problem view, discourse patterns and potential links to interest requirements.

After reading through all the documents, 57 documents could be excluded either because they had been submitted twice or because they could not be included due to a language barrier. At the end of the analysis, further documents had to be sorted out due to time constraints. Ultimately, only those documents were analyzed that could be expected to produce significant new findings. These were position papers submitted by stakeholders of the environmental, governmental or non-EU coalition. Thus, 53 additional responses from GHG companies were excluded, totaling 102 documents and 462 pages in the study.

3.3. Qualitative Content Analysis

As mentioned before, the method of this analysis is qualitative content analysis (QCA). It is widely used throughout the field of Public Administration and is particularly suitable for analyzing, reducing and thereby giving new meaning to large amounts of data, as in this study (Given 2008, 120). The study will follow the basic rules and principles worked out by Mayring (2014), as the strength of the scientific method, is that it follows relatively strict theoretical rules during the whole process of analyzation. Starting with the development of a research question to interpret the results, it is a systematic and rule-bound procedure. At the same time, every study has different features, and the rules need to be altered to the specific research aims and additional rules must be added (Mayring 2014, 39) to fully make use of the

advantages and the wide scope of the method. The QCA focuses on codes and categories that can either be deduced beforehand from the relevant theories or induced during the intensive study of the data. This form of text interpretation follows the aims of the research question and centers around categories "which were carefully founded and revised within the process of analysis (feedback loops)" (Mayring 2000). As in this study, it is not only the manifest content that is analyzed, here the reactions to the proposed solutions and their differences and similarities but also the latent content, the underlying interest requirements and belief systems of the actors (Mayring 2000). The aim is to discover themes or narratives that reveal the different realities behind the data (Vasimoradi and Snelgrove 2019, 2). Sabatier already noticed in his paper, that "the belief systems are normally highly correlated with self-interests" and the corresponding difficulty is to formulate a set of interest beforehand. Moreover, he proposed that in such an analysis the importance is that the actors indicate the belief systems through questionnaires, which can then be analyzed through a content analysis (1988, 142). The most important goal is to identify the actual content of the texts or data, which in the case of policy related documents is "the stated priorities [...] as well as [...] implicit political perspectives. Thus, content analysis is useful for identifying both conscious and unconscious messages communicated by text" (Given 2008, 120).

The study looks at the actors' positions and tries to categorize and analyze them in order to find recurring patterns and differences in the actors' statements. The focus is on the often-hidden information that some stakeholders express indirectly in their position papers. This includes interests, arguments and discourse patterns expressed through text. The explicit and hidden content and the interpretation of the results is crucial and can only be investigated with qualitative methods and not quantitatively, such as the statistical analysis of the associated survey.

3.4. Data analysis

The study will follow Mayring's theory of QCA (2014). Hence coding and categorizing are the center of the work. The codes in the beginning are derived, deductive, from the examined literature and, if necessary, inductive, from the data itself. The starting point is a coding scheme, which will refer to the different discourse-categories derived from Görlach (2018):

1. *Economic competitiveness*: views the problem of carbon leakages in the created disadvantages concerning the global competitiveness of EU businesses.
2. *Effectiveness*: The problem is the ongoing emission of GHG and the causing negative environmental impacts, as a result of ineffective climate policies.
3. *Efficiency*: The problem is the ongoing emission of GHG and the causing negative environmental impacts, as a result of uneven climate measures worldwide.
4. *Structural change*: problem in a way that the leakages hinder development of new technologies and damages the leading role of the EU in the field of GHG mitigation.

Deductive analysis

The categories are based on two different theories developed by Mayring (2014, 37). Firstly, they are prototypes and secondly, they are definitions to distinguish them from one another. Each of the four main categories represents an ideal type of problem perception derived from Görlach's theory. However, since this only defines the core of the category, it can be difficult to differentiate between them (Mayring 2014, 37). To counteract this issue, the categories each contain a precise definition, with "necessary and sufficient conditions for belonging to [it]" (Mayring 2014, 37), containing the core of the statement. In this study, there are different views on the main problem caused by carbon leakage and the implementation of an CBAM. To enable scientific and consistent work with the categories, coding rules, from Görlach's theory and anchor examples from the data, were also drawn up. These rules define precise

delimitation criteria to ensure an "unambiguous assignment to a particular category" (Mayring 2014, 95). The anchor examples, on the other hand, serve to illustrate an archetypal example of each category and will be supplemented and expanded as the work with the data progresses. In addition to the anchor examples, typical and meaningful words and phrases were identified in Görlach et al.'s paper that serve as indicators for a particular category.

Equally important as the categorization is the determination of the coding units. Mayring (2014, 51) speaks of three different units that enable the precise and, in particular, verifiable classification of codes for specific text passages. They refer to the size of the text segments that can be coded. The smallest component, the coding unit, is a sentence, the largest, the context unit, is a policy paper as well as the recording unit. The coding table shown below is composed of the main categories described above referring to the discourse patterns in the conceptions of carbon leakage and its solutions as a problem. In addition to the four categories, various subcategories were derived from Görlach's theory to enable a more precise assignment of the quotes and codes. During the process more codes and categories could be found as the data is intensively studied and the previous codes will need to be revised.

Inductive analysis

If, despite the fixed coding criteria, it will not be possible to assign certain text passages to a category, as these have not yet been recorded and examined, new categories with specific coding rules will be developed to assign these and other comparable cases (Mayring 2014, 97). Then, in addition to the deductive approach, an inductive approach must also be adopted to ensure an open-end coding process. In the first round of coding, codes are assigned to all quotes. In the second round, these are then grouped into larger categories and recurring themes are identified. In this step it will become apparent whether the scheme based on Görlach's theory is sufficient or whether it needs to be extended with a mixed coding approach. If this is the case, new coding rules are established, and the entire process is started from scratch. The goal is to develop a comprehensive category system, to which all codes and quotes can be assigned in a final round. This approach results in a back-and-forth movement in between the data, which is crucial for a good QCA (Vasimoradi and Snelgrove 2019, 2). Based on the broad review of the data so far, the codes in the first coding step will be in vivo codes, while later in the analysis mainly descriptive and value codes will be used.

3.5. Coding table:

Discourse patterns in the conceptions of carbon leakage and its solutions as a problem (Based on Görlach et al.)

Category	Subcategory	Sub-subcategory	Definition	Indicators and coding rules
Carbon leakage as a problem of economic competitiveness	Competitiveness of industries by increasing production cost relative to competitors ----- Countries lower existing standards to attract business	Competitiveness of private companies ----- Competitiveness of national economy	Domestic climate policy has a negative influence on the competitiveness of European companies, compared with countries with lower climate standards	Economy, competitiveness, industry, domestic industries, firms, revenue, disadvantage, unfair, loss, income, jobs, tax revenue, investment, lowering climate ambitions, production costs, competitors, climate constraints, environmental regulations, lower, higher, attractive, race to the bottom → Overall, more negative connotation of EU ETS climate policy and economical focus
Carbon leakage as a problem for the effectiveness of climate policy	Redistribution of emission between countries ----- Redistribution of emission between sectors		Emission-intensive activities are offshored from regulated countries to countries or sectors with fewer climate regulation or sectors	Effectiveness, unilateral, global emissions, effective, domestic, abroad, offset, climate goals, climate protection, emission increased abroad, redistribution of emissions, non-capped countries, Effect, potential, trade-off, constraining emission, GHG targets → Overall positive connotation of EU ETS climate policy and focus on climate protection and Global consistency
Carbon leakage and the (global) efficiency of climate policy	Attacks global GHG efficiency of production through raising production cost and creating net loss in welfare		Uneven distribution of GHG, due to uneven climate policies will race the cost to achieve a global reduction goal and increase GHG altogether	Efficiency, climate policy, production, unilateral, uneven, distribution, costs, worldwide, global, efficiency of production, cost-minimization, global GHG reduction goals, increase of costs, net-production, pollution-heaven, allocation of production activities, demand, cap, government → Overall neutral connotation of EU ETS climate policy and global cooperation focus

Carbon leakage and structural change towards deep decarbonization	Need for changes in sectoral structure of economy ----- Policy Debate on long term climate protection ----- Incapacity of EU to deliver ----- Development and implementation of new technologies		Carbon leakage as a problem for the overall debate on climate protection, as its protections economies and leads to insufficient measures	structural change, decarbonization, emission intensive industries, no incentive to change, insufficient policies and measures, low-carbon economy, conflict, change, technologies, carbon capture and storage (CCS), debate, future, new structure of economy, reduction, consumption, tools, carbon price, short- and long-term climate policy, deindustrialization, defensive, policy → overall negative connotation of EU ETS climate policy and structural change focus
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4. Empirical Analysis

The following part will present the process and result of the empirical analysis, building on the previously presented theories in order to verify and further develop them. The presentation of the results is structured from specific to more general. The analysis starts with the different discourse patterns before applying Sabatier's very general concept of actor coalitions, in combination with Yang et al.'s theory, to the specific case of European ETS policy. From the applied and extended theory of carbon leakage problem perceptions to the correlating findings on Actor Coalitions and their positions in the CBAM debate. The first and main part presents the transfer of Görlach's theory of carbon leakage problem perception in the EU ETS debate to the one of CBAM and discusses the extension thereof. After that, the results on the Actor Coalitions will be presented: how these problem perceptions align with the pre-established assumptions on their constellations and their interest requirements. Subsequently, the analysis circles back to the previously established connection of the two theories and discusses their validity and the resulting findings.

4.1. CBAM Discourse Patterns

The first important result is that Görlach's different discourse patterns in the debate on carbon leakage in the EU ETS can all be found in the debate on the new policy tool, the Carbon Border Adjustment Mechanism. The theory can be applied, with some modifications and extensions, to the concrete case. The basic essence of the theory, that the debate on new EU climate protection measures under a carbon market is guided by the different views on what the underlying problem of carbon leakage is and how it should be solved, and which areas should be focused on, can also be found in the CBAM debate. The four identified patterns and the associated position of the stakeholders have been confirmed by the deductive analysis (see table 1). During the coding rounds the decision was made to also follow an inductive

approach of analysis, to be open to new problem perceptions manifested in the actor responses. This made it possible to expand the previously established category system and thereby add to Görlach's theory. Complementary to this, the most important transfer step was to apply the developed coding scheme not solely to the problem conception of carbon leakages, but to the general conception of the actors regarding the new CBAM policy presented by the Commission. The outcome of the deductive and inductive analysis is outlined in the next paragraphs.

I. Carbon leakages and economic competitiveness

Deductive

The first of Görlach's identified categories adopts an economic point of view, which puts the main concern in the management of carbon leakage and future climate protection measures in the protection of the European economy and the maintenance of its competitiveness, in comparison to companies that do not have to meet such high climate requirements. This category could be transferred and confirmed without much change. However, with a total of 18 codes and 306 associated quotes, it is the category that appeared the least. Nevertheless, it was a recurring motive with a certain theme that ran through the analyzed data, namely that... "CBAM's first objective is carbon leakage prevention, and any other objective should be considered secondary. Therefore, to ensure EU production can remain competitive vis-à-vis producers outside the EU that do not apply CO2 pricing" (SolarPowerEurope Doc 59, 1f.). Görlach listed two subcategories that appeared frequently in the debate, competitiveness of private companies and competitiveness of nations' economies. While the competitiveness of private companies was of interest to some actors, it was coded 20 times in total, no relevant frequency in the mention of competitiveness of national economy could be detected, so this subcategory was dropped.

Inductive

In addition to the existing subcategories, the analysis led to the establishment of four new sub-subcategories. The first subcategory is competitiveness of specific sectors (25 quotes), with the sub-subcategory competitiveness of the export sector (69 quotes), which seemed to be of particular importance, as many stakeholders expressed concern that the introduction of a CBAM would put the European export market at a particular disadvantage. The following quote is an example of this: "a CBAM with full auctioning for EU producers would burden them with the full carbon costs, thereby undermining their ability to access export markets which for many European industries remain important" (Oficemen Doc 27, 3).

The second new sub-category is the competitiveness of the EU economy, with 55 quotes, which might be linked to CBAM impact on the international market rather than national markets. The next sub-subcategory, which was mentioned by far the most with 163 quotes, is support for Industry through transition. Many actors feel that the responsibility for climate change lies not only with the industry, but they also demand financial support to ensure their competitiveness. They put it like this "The industries will not be able to shoulder this extraordinary transformational burden on their own; they do require additional support" (German Industry Association Doc 2, 2), in this context, the continuation of free allocations, compensation for indirect carbon costs and the extension of state aid for companies, burdened by the measures, are of particular importance.

II. Carbon leakage and the effectiveness of climate policy

Deductive

Görlach's second category also applies. The perception that domestic emission reductions are nullified through an increase in emissions in countries without or with less ambitious carbon policies, was mentioned most often with 48 assigned codes and 897 associated quotes. The basic understanding was that "The effectiveness of the CBA will depend not only (and mainly) on its nature but mainly on the details of the design and its ability to ensure an effective enforcement and address risks such as cost absorption and source shifting" (EUROFER Doc 8, 7).

The basic category structure was not changed but extended and specified by the individual and wide-ranging views of the stakeholders. Görlach's subcategories Redistribution of Emission between countries (41) and between sectors (11) could be confirmed.

Inductive

Moreover, it was possible to extend the category by an additional equal and three subordinate categories. Especially in the context of effectiveness, the introduction of a carbon pricing system (274 quotes) was widely mentioned. According to the responses, this system is considered to be very complicated since the "calculation requires extensive knowledge of value chains, the production processes and of the environmental rules and costs in producer countries. In many cases, products consist of several parts originating in different countries, which adds another layer of complexity to the calculation process" (Institute Verbelen Doc15, 3). This includes the sub-subcategory administrative burden (41 quotes), in which many actors criticize the additional burden that arises.

The other two sub-subcategories are interrelated. The first, Scope of CBAM (250 quotes), is cited whenever the inclusion of different parts in the regulatory scope is mentioned, with widely differing opinions on what should be part of the new policy; "Whether the CBAM coverage includes indirect emissions from energy consumption, emissions from transport of goods, or the entire value chain versus only primary inputs, IEEP emphasizes the importance of considering the EU's broader climate policy objectives and foreseen measures in the selection of CBAM sectoral coverage" (IEEP Doc 162, 4). The second Sub-Subcategory value chain (94) was often coded simultaneously, as the importance of international supply chains and the potential impact of a CBAM on them was discussed extensively.

III. Carbon leakage and the (global) efficiency of climate policy

The Category focuses on the lack of efficiency in climate measures due to uneven distribution of GHG, because of differing climate policies, which will raise the cost to achieve a global reduction goal and increase GHG altogether. This category with 30 codes and 493 quotes, was altered the most from Görlach's original description. Primarily, due to the fuzzy and undifferentiated nature of this category in theory, it was not possible to develop an adequate deductive coding scheme based on it. The aspects that could be included and confirmed are the themes Social Impact (62) and Differences in climate Regulation (31), to which two additional subcategories and one sub-subcategory were added. However, the main category remains very vague and is best defined as the need for the simplest and easiest solution to achieve the climate goals for all involved parties. The subcategory Design of CBAM (141 quotes) is particularly linked to this. The actual design of CBAM is very controversial, but all actors agree that "it is important that the EU's CBAM, when implemented, be based on a methodology that is transparent and objective and based on best practices" (Alberta Ministry Doc 40, 3). In addition, CBAM should be designed in such a way that it has a guiding effect (170 quotes) for companies and jurisdictions inside and

outside of the EU. One way to achieve this, has been discussed extensively and has become a subordinate category, is Rewarding low Carbon (89 quotes). The objective is to recognize the steps already taken and those to come by companies and governments to protect the climate. It is considered by many stakeholders that "Any CBAM should allow for the flexibility to reward companies and sectors that operate in a low-carbon or carbon-neutral manner, by allowing these to maintain the access they have to EU markets" (Brazilian Tree Industry Doc 22, 6).

IV. Carbon leakage and structural change towards deep decarbonization

Deductive

The last main category identified by Görlach is also the most comprehensive. Carbon leakages and insufficient measures as a challenge for climate protection as a whole and a focus on structural change are of great importance in the debate on CBAM. With 61 assigned codes and 756 quotes, it is the second most frequently mentioned, but most diverse main category. The main theme associated with it is that "This increased ambition is a necessary and intermediate step in its decarbonization trajectory to reach a net-zero and resilient economy by 2050" (ENGIE Doc 67, 1).

Based on the theory, four subcategories were developed and validated by the analysis. The most significant is Structural Change (103 quotes), which essentially refers to a green transition of the global market towards a sustainable economy. This will be made possible primarily through technological innovations (150 quotes). Which must not only be developed but also implemented, since "The key of global warming countermeasures lies in technology. Effective measures backed by technology are indispensable" (Steel Company Doc 6, 1). At the same time, many actors believe that the slow pace of change is due to the incapacity of the EU to deliver (26).

Nevertheless, the overarching theme is to focus all measures on long-term climate protection (207 quotes), whereas many but not all agree that "the overall long-term benefits for the climate should outweigh the short-term commercial risks" (ENGIE Doc 67, 3).

Inductive

To include the perceptions of all actors, three further sub-subcategories were added to complement the previous ones. The first is the trust in the effectiveness of market mechanisms (90 quotes), and the second is the call for additional policies (88 quotes) to provide a framework for structural change. A recurring theme is that "CBAM alone is not a silver bullet to achieve the ambitious EU energy and climate goals. Other policy tools to mitigate carbon leakage risks and incentivize low-carbon investments will be required to deliver a sustainable future" (International Association of Oil & Gas Producers Doc 45, 5). The last sub-subcategory mentioned is Investment Security (92 quotes), which refers to the industry's desire to have long-term security in the adoption of green technologies.

Additional findings

During the evaluation of the results, the four categories had to be modified and extended by two new categories. During the first round of coding, many codes were quoted that could not be assigned to one of the preliminary, developed categories. Thus, the need for an extension of those through inductive coding became apparent. After about 50% of the documents had been analyzed in the first round of coding, it became obvious that the coding scheme was not comprehensive enough, and further problem perception categories became evident in the actors' responses. The objective of the analysis was to be open and unbiased from the beginning, and it was anticipated that the theories may need to be extended. This was necessary to counteract the shortcomings of the deductive approach. For the most part, the chosen coding

method was very successful. However, it proved to be very useful to also code inductively in order to fulfil the thesis' aim of investigating the interests of the stakeholders. In order to continue to meet the scientific standards of the thesis, the rules that Mayring (2014) established for this case were followed: "If you come to a text passage where the assignment to a category remains unclear, try to come to a decision and formulate a coding rule for this and following similar cases" (97). Rules for coding the new categories were developed and then all documents were re-analyzed to prevent errors in the frequency of the codes.

The revised version is still based on the theory of problem perceptions developed by Görlach et al. but in the light of the further development of the theory for the CBAM debate, the focus here was no longer solely on the problem of carbon leakage, but, as in the previous section, on possible problems arising upon the introduction of a CBAM.

As a result, it was possible to actually update the theory and transfer it to the CBAM debate. The outcomes are described in more detail below, and all categories, as well as their frequency and associated codes, are presented in Table 1.

V. Carbon Leakage and the Provision of equal Opportunities

The first new main category can be applied where actors see the non-recognition of different responsibilities in prevention and mitigation, as well as the privileges of some countries, as a problem for climate protection and sustainable development. When introducing new climate protection measures, it is important to keep in mind that "the implementation of these commitments may vary according to the principle of "common but differentiated responsibilities and respective capabilities, in the light of different national circumstances" (Ukraine Business & Trade Association Doc 3, 3). The category is relatively less represented, with 35 codes and 320 associated quotes, and consists of three subcategories and four sub-subcategories.

The first subcategory further specified on this principle. The importance of Climate Justice (131 quotes) is a concern for several actors, since "The climate crisis is already affecting most hardly the poorest and marginalized people, especially in developing countries, who are the least responsible for the CO₂ emissions" (Oxfam Doc 74, 2) and these circumstances should not be aggravated by imposing unfair demands on least developed countries. Fairness is generally the overarching theme, as the second subcategory calls for Equality of EU and Non-EU Businesses (141) when it comes to the implementation of new climate policies such as CBAM. One way to promote fairness and equal sustainable development opportunities is seen in the distribution of revenue (48 quotes). "Revenues from the CBAM should be returned directly and used to support low-emission transformation in countries and sectors where they are the most needed" (Centre for Climate and Energy Analysis Doc 74, 3). However, the distribution of these revenues is highly controversial, thus four sub-subcategories have been identified. These revenues are to be used either for company compensation (3), for green investment (20), for least developed countries (11) or for citizens (4).

VI. Carbon Leakage and the globalized System

The last main category is also a newly established one. It accounts for statements that emphasize that the environmental damage caused by the global market has to be solved globally and that unilateral attempts can disrupt relations and climate protection. A statement that represents this view well but is rather a

minor opinion regarding the fulfillment of this criterion of CBAM is: "the EU's CBAM approach is local [...], its impacts are intended to be global, in fact leading to an effective reduction in global carbon emissions" (Tatiana Falco Doc 1, 3). With a total of 25 codes and 370 correlated quotes, this point is important for many stakeholders. However, the opinion of many is that the unilateral approach of CBAM will not have a global effect, but on the contrary, they are concerned about compliance with international regulations (139 quotes), especially with WTO regulations, since "designing a mechanism to seek carbon leakage protection will undoubtedly be politically and legally challenging, [the] EU Commission should consider some guidelines while designing, such as being fully compatible with current EU strategies on that field [...]; and alignment with WTO guidelines" (Repsol Doc 42, 2). This is the first of the three subcategories, which incorporates one additional subcategory, The Reaction of Trade Partners (206 quotes), which is generally estimated to be rather negative and could provoke retaliatory measures.

Therefore, many see the solution in international cooperation (132 quotes), which should ultimately result in the development of a global carbon market (45 quotes), since "these important policy goals can be achieved most efficiently, firstly through a multilateral process, instituting an international carbon market as described in the Paris Agreement" (NLMK Plate Sales Doc 4, 2). Many actors see the need for global mechanisms, in the last sub-subcategory, interconnected Global Trade (24 quotes), which, through its many linkages, leaves no chance for national or unilateral climate policies.

Category	Subcategory	Sub-subcategory	Description	Codes
Carbon leakage and economic competitiveness (18 Codes/ 306 Quotes)	Competitiveness of private companies (20) Competitiveness of EU economy (55) Competitiveness of specific sectors (25)	Competitiveness of Export Sector (69) Support for Industry through Transition (163)	Domestic climate policy has a negative influence on the market competitiveness of European companies, compared with countries with lower climate standards	Carbon leakages as main goal of CBAM, Competitiveness, Economic disadvantage, Export, Level Playing Field, voluntary, Competitiveness in third markets, imports replacing European products, no cap reduction, protection of economy Compensation for Economy, Compensation for Indirect Cost, financing of transition, free allocation, state aid, support...
Carbon leakage and the effectiveness of climate policy Effectiveness (10/ 186) (48 Codes/ 897 Quotes)	Redistribution of emission between countries (41) Redistribution of emission between sectors (11) Carbon pricing System (14/274)	Scope of CBAM (18/250) Value Chain (5/94) Administrative Burden (41)	Emission-intensive activities are offshored from regulated countries to countries with fewer climate regulation or sectors	Benchmark per product, carbon calculation, increasing cost, monitoring of emission, effectiveness, increase of emission outside EU, lowers incentive for decarbonization, risk, carbon intensive sector, energy sector inclusion, exemption of CBAM, indirect emission, Scope of CBAM, downstream impact, global supply chain...

Carbon leakage and the (global) efficiency of climate policy (30 Codes/ 493 Quotes)	Social Impact (6/62) Guiding Effect (9/170) Design of CBAM (7/ 141)	Rewarding low Carbon (5/89) Differences in Climate Regulation (2/31)	Uneven distribution of GHG, due to uneven climate policies will raise the cost to achieve a global reduction goal and increase GHG altogether	Cap, feasibility, phases in implementation, lack of commitment by trading partners, efficiency, EU leading role, incentive for decarbonization, positive effect on third countries, jurisdiction with similar ambitions, job security, raising prices for consumers, social acceptance, transparency...
Carbon leakage and structural change towards deep decarbonization (61 codes / 756 Quotes)	Structural Change (9/103) Incapacity of EU to deliver (3/26) Technological Innovation (7/150) Long-term Climate Protection (17/207)	Market Mechanism (11/90) Additional Policies (4/88) Investment Security (10/92)	Carbon leakage as a problem for the overall debate on climate protection, as it protects economies and leads to insufficient measures	Alternative measure, complementary to ETS, EU Inability, incentive for investment, investment leakage, uncertainty, carbon neutrality, emission reduction, end free allowances, long term goals, reducing carbon leakages, company responsibility, high industry influence, import, market for green material, recycling, green transition, industry transformation, fossil fuels, low carbon technology, renewable energy, innovation, market changes, Decarbonization, subsidies...
Carbon Leakage and the Provision of equal Opportunities (35 codes/ 320 quotes)	Climate Justices (14/131) Equality of EU and Non-EU Businesses (11/141) Revenue Distribution (10/48)	For Company compensation (3) For green Investment (20) For least developed countries (11) For citizens (4)	Non-recognition of different responsibilities in prevention and mitigation, as well as privileging of some countries, is a problem for climate protection and sustainable development	Tax revenue (CBAM), revenue Distribution, EU responsibility, global south, just transition, Least developed countries, polluter pays principle, risk for the poor, Competitiveness of non-EU, discrimination EU/non-EU, double taxation, fairness, Third country producers, non-discriminatory regulations, border tax equal to allowances price...
Carbon Leakage and the globalized System (25 Codes/ 370 Quotes)	Compliance with international Regulations (3/139) International Cooperation (7/152) Global Carbon Market (3/45)	Interconnected global Trade (2/24) Reaction of Trade Partners (10/206)	The environmental damage caused by the global market should be solved globally, unilateral attempts can disrupt relations and climate protection	Legal, Paris Agreement, WTO, global carbon pricing system, global impact, climate diplomacy, dialogue, free riding, governmental collaborations, avoidance strategies, circumvention, protectionism, risk of retaliation, sanctions, source shifting, trade partner, unilateral, geopolitics, global market, harmonized regulation, ETS linkage...

Table 1: Code frequency of all new and preliminary developed categories

4.2. Advocacy Coalitions

In the first part, the main outcome of the analysis, the extension and adaptation of the problem perception theory in the CBAM debate, has been presented and described in detail. The second part will in the following evaluate the connection to the actor coalitions. Did they position themselves and argue as described by Yang and Peterson, and could the coalitions be attributed to a specific category? As a first step, it is important to introduce the actor coalition before their statements can be examined and compared in order to discuss in the second step whether the idea of their core interests or interest requirements is applicable.

4.2.1. Actors

According to Yang et al. the actors are divided into three coalitions and a comparative group. The first coalition defined by Yang, previously only consisting of GHG emitting companies, was expanded since its main theme, "the maximization of economic benefit" (2010, 84), could be assigned to more than just GHG emitting companies. With 68 stakeholders, it is the largest group and is now framed as a Industry Coalition. It includes business organizations, non-emitting companies, GHG emitting companies, industry associations and lobby organizations. The Pro Environmental Coalition which primarily seeks environmental protection (Yang et al. 2010, 84) has 29 stakeholders. Its members are aid organizations, citizens, environmental organizations, NGOs, environmental transition think tanks, and a union. To the governmental Institution Coalitions, only four responses could be assigned, thus this group is not representative. Most of the stakeholders in this group come from outside the EU and therefore a comparative group with all non-EU responses, comprising ten actors, was created. Seven of these belong to the first Coalition and three to the last.

4.2.2. Stakeholder Problem Perception in the CBAM Debate

The pre-established links between the actor coalition and various problem categories were based on theory alone. The industry coalition was predicted to be particularly related to the economic competitiveness category. While the environmental protection coalition was mainly expected to focus on the effectiveness and efficiency category. Already in theory, no problem perceptions could be attributed to the government coalition, since as an executive and mediating actor their interests were expected to shift in various directions. Unfortunately, due to the lack of data on this coalition, no new insights could be generated hence they won't be part of the analysis.

Since both the number of codes in the different categories and the number of responses from the actor coalitions varied widely, a frequency analysis is of limited usefulness. Therefore, only the relative numbers of the code-coalition analysis were included and are presented in Table 2.

	1. GHG Emission...	2. Envirometal Pr...	3. governmental i...	4. non-eu	Summen	
	68 772	29 369	4 29	10 76		
Economic Com... 14 335	248 74,03 % 18,20 %	74 22,09 % 9,50 %	4 1,19 % 6,25 %	9 2,69 % 5,81 %	335	100 % 14,19 %
Effectiveness o... 49 532	348 62,70 % 25,53 %	171 30,81 % 21,95 %	7 1,26 % 10,94 %	29 5,23 % 18,71 %	555	100 % 23,51 %
Efficiency of cli... 30 367	196 48,76 % 14,38 %	149 37,06 % 19,13 %	16 3,98 % 25,00 %	41 10,20 % 26,45 %	402	100 % 17,03 %
Globalized Sys... 25 329	217 59,94 % 15,92 %	96 26,52 % 12,32 %	15 4,14 % 23,44 %	34 9,39 % 21,94 %	362	100 % 15,33 %
Provision of eq... 26 209	82 36,44 % 6,02 %	118 52,44 % 15,15 %	9 4,00 % 14,06 %	16 7,11 % 10,32 %	225	100 % 9,53 %
Structural chan... 61 459	272 56,43 % 19,96 %	171 35,48 % 21,95 %	13 2,70 % 20,31 %	26 5,39 % 16,77 %	482	100 % 20,42 %
Summen	1363 57,73 % 100 %	779 32,99 % 100 %	64 2,71 % 100 %	155 6,57 % 100 %	2361	100 % 100 %

Table 2: Frequency analysis (whole and relative numbers) of all stakeholder coalitions

I. Industry Coalition

The actors in the industry coalition most frequently made statements that fall into the category of effectiveness, with 26% overall, followed by structural change with 20% and economic competitiveness with 18%. With just under 15% each, efficiency and globalized systems are close behind. Topics related to equal opportunities are far behind with 6% and do not seem to play a significant role for these actors. These results do not match the expectations that Economic Competitiveness will be the most prevalent Problem Perception.

A different picture emerges, however, by looking more into the details of the codes and considering which subcategory was mentioned most often, this is Competitiveness, with 12% and four percent points difference to the second most frequently mentioned code category. Next are statements about the carbon pricing system (8%), mostly referring to how it should be designed to cause minimum constraints and burdens for companies. This corresponds to the ideas and concerns about the Scope of CBAM (7%). Quotes in this category address stakeholders' positions on which sectors should be included in the CBAM system. Many argue that their sector should be excluded due to negative impacts. In addition, many actors (7%) fear that their non-EU trade partners may react negatively to the introduction of this climate policy and take retaliatory measures, which in turn would have a negative impact on their business.

All in all, the preliminary predictions can be confirmed. The industry coalition is mainly concerned with their own economic interests and the effect that stricter climate protection measures will have on them. They are linked in theory and in this case to the Competitiveness Category and to the Effectiveness and Structural Change ones, but they advocate for their economic interests.

Nevertheless, it is not correct to speak of a general refusal to accept climate protection. Many express a positive attitude towards climate protection, which is reflected in the fact that 7% are concerned about the effectiveness of such policies. But the opinion about CBAM as a tool that can combine climate and carbon leakage protection is rather low, with 25 companies expressing a negative view of CBAM and only 18 a positive one. This can be explained by the fact that CBAM is supposed to replace the free allocation of allowances in the ETS and further restrict compensation measures for companies; which is

with 79 citations, the third most frequently cited code of all and thus of high relevance. This is underlined by the fact that 25 of 67 actors demand an impact assessment and, if necessary, revisions of the measures by the Commission before the actual implementation of CBAM.

II. Environmental Protection Coalition

With 22% each, the two main categories, effectiveness and structural change rank equally among the actors of the environmental Coalition. Followed by the efficiency of the climate measures with 19% and the focus on the provision of equal opportunities (15%). The 5th most common category is the globalized system with 12.5% and the least common is economic competitiveness with only 9.5%. The prediction was that this coalition would prioritize the protection of the environment over economic issues, which can be confirmed by this. Structural change in the economy and society is emphasized. Consequently, the long-term climate protection is, with 7.5%, the most frequently coded subcategory. In contrast to the Industry Coalition, the focus was on introducing a highly effective carbon calculation system that includes the entire value chain and all sectors in order to achieve the most efficient scope and impact. For many actors, climate justice (6.5%) played an essential role in the introduction of such a system. The focus in this context was often on the role of least developed countries.

A recurring narrative throughout was "shared but different responsibilities", which holds the EU and other industrialized nations to a historical responsibility towards other non-industrialized countries. Moreover, it promotes support rather than challenges for these countries. Furthermore, the EU is seen in a guiding role (6%) motivating and incentivizing other countries and non-EU producers to strengthen their own climate protection measures.

In summary, the core interest can be identified as environmental protection and equality, which matches the one of Yang et al. and allows a precise link to the problem perception categories structural change and effectiveness. Given this context, it is not surprising that of all the coalitions clear positions on CBAM, around half have a positive view of the proposed climate policy.

III. Non-Eu Actors

No initial assumptions or connection were made about non-Eu actors, as it was not planned to include this coalition in the analysis. But as already noted before, it was still expected that new coalitions would emerge during the process. The group of non-EU actors can be framed as a coalition, as they meet the conditions developed by Sabatier (1988, 131). They are not a formal organization but they, as will be demonstrated in the following, all share a common goal in the CBAM policy debate and are actively involved, thus they can be classified as a new actor coalition.

As this group only consists of ten different actors, who come from the industry and governmental sector, the results from the analysis are not very significant, but they highlight the contrast between the position of EU and Non-EU actors, in the policy debate. In addition to this, three of the four governmental actors are part of this coalition so the examination of the code occurrence in this group may also provide some limited insight into the position of the last, not individually analyzed, coalition.

The most mentioned main category is Efficiency with 26.5%, followed by the globalized system with 22% and the Effectiveness of climate measures (19%). Structural Change is close behind with 17%. Less frequently mentioned is the provision of equal opportunities (10.5%) and of minimal concern is economic competitiveness (6%). Since the last category mainly refers to the competitiveness of EU companies, it is easy to explain this lack of interest. Surprisingly, there is no greater focus on equal opportunities, given that this main category covers the equality of EU and non-EU producers. The code category that could be assigned most frequently is rewarding low carbon (13%). In this way, the view of the international actors was expressed that their sometimes already ambitious national climate

measures should be considered in the design of a future CBAM.

Many references are also made to the carbon pricing system (9%), as some non-EU actors expect to be disadvantaged by it. Related to this is the high number of citations of international cooperation (8%), as many non-EU actors demand to be actively involved in the design process to collectively work towards a global carbon market (7%).

Even though only a few of the actors in the Coalition responded, a clear picture of their problem perception and core interest can be identified. The Coalition aims to ensure the best for their jurisdiction without being restricted by an EU CBAM. This position is coupled with a negative view on CBAM, as all four actors who expressed a clear position on the policy have a negative view on it.

5. Conclusion

The last step after presenting and discussing the results of the qualitative content analysis in detail is to place them in the larger context of this study.

The aim of the paper was to highlight possible grounds for compromise and change and thus advance the debate on the introduction of the new climate policy CBAM. Therefore, two theories were selected to help examine the policy position papers of the involved stakeholders and answer the research question:

How do the policy positions of actors involved in the current CBAM debate correlate to previously established actor coalitions and corresponding discourse patterns regarding carbon leakage?

The question was broken down into two sub-questions which focus each on one aspect of it. Both will be answered in the following, thus making a separate answer to the main question unnecessary.

The first question to answer is; *In what way can the actor coalitions defined by Yang et al. be assigned to the discourse patterns identified by Görlach et al.?*

A combination of both approaches was first done theoretically and then translated into a comprehensive coding scheme that allowed a structured analysis of the stakeholder responses. The theories were confirmed by the analysis and their respective relevance for each other was shown and built on. Both the actor coalitions identified by Yang et al. and the discourse patterns developed by Görlach et al. were relevant for the EU ETS debate and the EU CBAM debate. In the beginning the theories were not current, but with minor modifications throughout the process they proved to be still highly relevant.

The second question is: *How are the problem perceptions and discourse patterns of the stakeholders similar or different and can these be traced back to certain core interests?*

The main difference is the interpretation of CBAM, which goal is to be pursued with this measure. Some actors see it as a tool to protect the competitiveness of the European economy against other companies, who are less burdened by climate protection measures. And others frame it as the next step of the EU to fight climate change and protect the environment. As much as these two views diverge, so do the problems of perception of the actor coalitions. While climate protection is an important issue for almost every stakeholder, the views on how this should look like and who is responsible to achieve it differ widely. Thus, despite many shared ideas and fears, the core interests of the respective actor coalitions prevailed throughout the debate; The industry coalition prioritizes economic interests, while the environmental coalition fights for environmental protection.

Throughout the analytical process, some obstacles occurred. The deductive categorization approach did not hold throughout the process. Some pre-established codes and categories overlapped, leading to less clear delineation. The coding scheme was not advanced enough to full fill the scope of the thesis by itself. However, the problem could be circumvented by adopting a mixed method approach and thus led to a scientific contribution by not only connecting Görlach et al's theory with Yang et al's theory of different actor coalitions. But as well by expanding it with new problem perception regarding not only carbon leakage but also the implementation of measures to prevent it. The theory has thus been successfully transferred from the ETS debate to the CBAM debate.

An idea for further research in this important policy implementation process would be to conduct a fully inductive analysis of responses of the next stakeholder consultation round, focusing on the evaluation of different proposed tools in the newly revised CBAM policy.

All in all, despite certain limitations, an important societal contribution was made to reaching a compromise in the CBAM debate. Although the views and interests of the different actor coalitions differ widely in some areas, the Commission now must improve the policy through a comprehensive impact assessment in such a way that it does justice to both interests and eventually protects both; the climate and the European economy.

Data Appendix

All documents originate from the year 2020 and can be derived from the website of EU Commission:
https://ec-europa-eu.ezproxy2.utwente.nl/info/law/better-regulation/have-your-say/initiatives/12228-Europaischer-Gruener-Deal-CO2-Grenzausgleichssystem-/F_de

1. F1304746-Tatiana Falco (29).pdf
2. F1304737-German Industry Association (3).pdf
3. F1304744-Ukraine Business & Trade Association (5).pdf
4. F1304745-NLMK Plate Sales (7).pdf
5. F1304735-EU Producer (3).pdf
6. F1304742-Steel Company (2) .pdf
7. F1304728-Kubal (4).pdf
8. F1304730-EUROFER (16).pdf
9. F1304724-maki-Consulting (1).pdf
10. F1304719-industriAll Europe (4).pdf
11. F1304722-EURACOAL_European Association for Coal and Lignite (3).pdf
12. F1304706-Tiberius (1).pdf
13. F877909-Joachim Englisch (7).pdf
14. F877907-Client Earth (3).pdf
15. F877906-Institute Verbelen (12).pdf
16. F877890-CATF_Clean Air Task Force (5).pdf
17. F877887-WWF_EPO (4).pdf
18. F877883-Supra Co- Ltd (1).pdf
19. F877884-EBMA_European Bicycle Manufacturers Association (7).pdf
20. F877877-Mission of Canada in EU (2).pdf
21. F877876-A4E_Airlines for Europe (2).pdf
22. F877878-IBA_Brazilian Tree Industry (7).pdf
23. F877863-Feasta-Foundation for the Economics of Sustainability (8).pdf
24. F877862-BASF (2).pdf
25. F877858-Veolia (3).pdf
26. F877861-Finnish Metals (11).pdf
27. F877856-Oficemen (6).pdf
28. F877853-outokumpu (4).pdf
29. F877852-ACP_Airline Coordination Platform (2).pdf
30. F877864-M. Mehling & R. Ritz (23).pdf
31. F877851-FACE_Federation of Aluminium Consumers (2).pdf
32. F877847-Bioenergia (2).pdf
33. F877848-Bellona_Europa (17).pdf
34. F877841-BSP_Business and Science Poland (11).pdf
35. F877840-Confederation_of_Dutch_Industry_and_Employers (6).pdf
36. F877846-Eurometaux (15).pdf
37. F877850-AEGIS Europe (6).pdf
38. F877839-OGUK (2).pdf
39. F875673-Fuels Europe (4).pdf
40. F873455-Alberta Ministry of Jobs, Economy and Innovation (4).pdf

41. F873454-PJSC_LUKOIL (2).pdf
42. F873452-Repsol (3).pdf
43. F873451-PRI Association (4).pdf
44. F873448-EuRIC AISBL (2).pdf
45. F875675-IOGP_International Association of Oil & gas producers (6).pdf
46. F873453-DIHK-Deutscher Industrie. und Handelskammertag (11).pdf
47. F873439-Hydro (5).pdf
48. F873426-Danish_Chamber_of_Commerce (3).pdf
49. F873437-ICBA_International Carbon Black Association (2).pdf
50. F873425-FNADE (1).pdf
51. F873424-CEFIC_European Chemical Industry Council (3).pdf
52. F873421-Bioenergy_Europe (1).pdf
53. F873232-Swedish Confederation of Enterprise (8).pdf
54. F873228-Forum Umwelt und Entwicklung (4).pdf
55. F873098-COCERAL (1).pdf
56. F873224-AJINOMOTO Animal Nutrition Group (1).pdf
57. F873097-Business Europe (7).pdf
58. F872902-Finnish Forest Industries (2).pdf
59. F872899-SolarPowerEurope (2).pdf
60. F872878-Confederation of Finnish Industries EK (2).pdf
61. F872868-Danish Energy (3).pdf
62. F872859-RUSAL (6).pdf
63. F872863-CCE Bankwatch Network (2).pdf
64. F872858-DI Confederation of Danish Industry (1).pdf
65. F872853-EcoVadis (4).pdf
66. F872852-jernkontoret (2).pdf
67. F872850-ENGIE (3).pdf
68. F872846-EEA European Express Association (1).pdf
69. F872845-Grid ventures (3).pdf
70. F872844-CCOO Construcción y Servicios (2).pdf
71. F872843-Government of Quebec (5).pdf
72. F872841-CAKE_Centre for Climate and Energy Analysis (3).pdf
73. F872838-CEPI_Confederation of European Paper Industries (6).pdf
74. F872836-Oxfam (4).pdf
75. F872826-Nivelles Beton (2).pdf
76. F872824-Accountancy Europe (10).pdf
77. F872819-MOL Group (2).pdf
78. F872820-CIRFS European Man-Made Fibers Association (3).pdf
79. F872817-Vattenfall (2).pdf
80. F872818-ERCST European Roundtable on Climate Change and Sustainable Transition (15).pdf
81. F872812-Tata Steel (1).pdf
82. F872813-Carbon Market Watch (7).pdf
83. F872815-Citizens Climate Europe (21).pdf
84. F872808-Hellenic Lime Associations (2).pdf
85. F872807-EEB_European Environmental Bureau (8).pdf
86. F872806-Cabot Corporation (2).pdf

87. F872804-IETA International Emission Trading Association (5).pdf
88. F869177-ZEP Zero Emission Platform (2).pdf
89. F869169-Ecopreneur.eu (5).pdf
90. F869167-Wind Europe (3).pdf
91. F855107-HWE Hazardous Waste Europe (1).pdf
92. F854621-EDA European Dairy Association (1).pdf
93. F854619-FRUCOM (1).pdf
94. F853681-ActionAid (7).pdf
95. F850091-CAN Climate Action Network Europe (4).pdf
96. F850082-IEEP_Insitute European Environmental Policy (7).pdf
97. F850078-economiesuisse (3).pdf
98. F850075-Sandbag (6).pdf
99. F846608-Union of Industrialists of the Regional Association of Employers of the Altai Territory (2).pdf
100. F847467-CO2 Abgabe e.V. (8).pdf
101. F841788-KITA Korean International Trade Association (1).pdf
102. Ministry of Economic Affairs and Communication Estonia (1).pdf

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