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Tapping the Conversation on the Meaning of Decarbonization: Discourses and Discursive Agency in EU Politics on Low-Carbon Fuels for Maritime Shipping

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Abstract: EU politics on decarbonizing shipping is an argumentative endeavor where different policy actors strive try to influence others to see problems and policy solutions according to their perspectives to gain monopoly on the framing and design of policies. This article critically analyzes, by means of argumentative discourse analysis, the politics and policy process related to the recent adoption of the FuelEU Maritime regulation, the world's first legislation to set requirements for decarbonizing maritime shipping. Complementing previous research focusing on the roles and agency of policy entrepreneurs and beliefs of advocacy coalitions active in the policy process, this paper dives deeper into the politics of the new legislation. It aims to explore and explain the discursive framing and politics of meaning-making. By analyzing the political and social meaning-making of the concept "decarbonizing maritime shipping", this paper helps us understand why the legislation was designed in the way it was. Different narratives, storylines and discourses defining different meanings of decarbonization are analyzed. So is the agency of policy actors trying to mutate the different meanings into a new meaning. Two discourses developed in dialectic conversation framed the policy proposals and subsequent debates in the policy process, focusing on (i) incremental change and technology neutrality to meet moderate emission reductions and maintain competitiveness, and (ii) transformative change and technology specificity to meet zero emissions and gain competitiveness and global leadership in the transition towards a hydrogen economy. Policy actors successfully used discursive agency strategies such as multiple functionality and vagueness to navigate between and resolve conflicts between the two discourses. Both discourses are associated with the overarching ecological modernization discourse and failed to include issue of climate justice and a just transition. The heritage of the ecological modernization discourse creates lock-ins for a broader decarbonization discourse, thus stalling a just transition.

Keywords: decarbonization; discourse analysis; discursive agency; ecological modernization; low-carbon fuels; politics of meaning; shipping; zero-carbon fuels

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1. Introduction

1.1. A Need for Decarbonizing Maritime Shipping

International shipping transports 90% of the world's trade by volume, making it vital to the world economy [1]. Widespread outsourcing and an increased sophistication of logistics provisions mean that the international shipping industry has evolved to having an integral and strategic role within many global industries [2]. But the maritime sector is heavily dependent on fossil fuels, which results in significant emissions of greenhouse gas (GHG), and without new policies, they are estimated to rise significantly [3]. In 2022, the sector emitted almost 850 million tons of carbon dioxide (CO_2), equivalent to 2% of global energy related CO_2 emissions, and these could double by 2050 without new policies [4]. Oil products constitute >99% of total energy demand for international shipping, while biofuels met only <0.5% of total energy demand [5]. Reducing the use of fossil

fuels and GHG emissions of international shipping is a major challenge for the maritime sector. Reducing GHG emissions in line with the Paris Agreement targets requires the widespread supply and deployment of so-called low- and zero-carbon (LoZeC) fuels for marine propulsion [5,6]. All LoZeC fuels known today, such as liquid biofuels, biogas, and "renewable fuels of non-biological origin" (RFNBOs) have different potentials, advantages, limitations and costs [7–9], and strong policy is needed to scale up the production and use of these fuels. RFNBOs are derived from hydrogen made with renewable electricity and include electrofuels like green hydrogen, e-methanol, e-methane, ammonia, and e-diesel.

Governance of international shipping is managed by the International Maritime Organization (IMO). In 2018, the IMO adopted an initial climate strategy, aiming to reduce carbon intensity of ships by at least 40% by 2030 and 70% by 2050. Total emissions shall be cut by at least 50% by 2050, compared to 2008 [10]. To complement the strategy, the IMO adopted a set of short-term measures in 2021, including mandatory goal-based operational and technical requirements [11]. However, the initial strategy was widely criticized for lacking ambition [12–17], and the IMO climate strategy was revised in 2023, setting a net-zero emissions target by around mid-century and interim targets for 2030 and 2040 [18]. This criticism and the slow progress in the IMO motivated EU policymakers to act unilaterally, presenting and adopting EU policies for decarbonizing shipping [19,20]. After two years of negotiations, the co-legislators of the EU, i.e., the Council of the EU (Council) and the European Parliament (EP), agreed on the FuelEU Maritime (FEUM) regulation to stimulate the uptake of LoZeC fuels in maritime transport [21], and to include of shipping in the EU emissions trading system (EU ETS) [22].

1.2. Research and Research Gaps on Policy for Decarbonizing Maritime Shipping

The decarbonization of international shipping is impeded by a complex set of barriers, e.g., political, institutional, organizational, structural, behavioral, market and non-market failures [23,24]. For instance, split incentives between owners and users of ships decreases the motivation of owners to invest in solutions benefiting the users, who often hire ships. In addition, the interests of incumbent players from the shipping and oil and gas industries represent a huge political challenge for decarbonizing shipping, as in decarbonization in general [25–30]. They refer to the high costs of alternatives to fossil fuels and long lifetimes of investments in ships as well as concerns of global competitiveness of the EU shipping industry that could face costly transitions, as well as why they prefer global policy under IMO rather than EU policy [24]. Incumbent shipping companies, shipping trade associations and the fossil fuel industry often accept the need to deliver a "fair share" of GHG emission reductions but insist that policy instruments must not inhibit economic growth [14].

The shipping sector is diverse, with different kinds of vessels serving different kinds of transport purposes, e.g., coastal passenger transport, cruising and intercontinental freight. Steen et al. [31] and Bergek et al. [32] argue that different LoZeC technologies have different advantages and disadvantages in different shipping segments, making them suitable for different sector segments. Thus, there is a need for segment specific policies. Harahap et al. [33] (p. 11) argue that a "combination of demand pull-types of instruments, technology-push instruments, and fiscal policies are essential to meet the net-zero emissions in the shipping sector". Bach et al. [34] (p. 16) argue more specifically for the need of "further funding possibilities, market stimulation measures, development of educational policies, and creation of further synergies between the [technological innovation systems for different LoZeC fuels]". It is of particular importance to strengthen climate policy to incentivize the increased production and uptake of LoZeC technologies [34]. In this regard, several parties to the IMO have proposed development and adoption of market-based mechanisms (MBMs) as cost-efficient policy options to reduce GHG emissions [35–38]. How companies respond to the price signals imposed by MBMs such as emission fees or cap-and-trade systems considered in the IMO depends on the companies' approach to environmental strategy, e.g., risk-based or process-based, where process-based companies

are more keen to engage in technological innovation [35]. De Beukelaer analyzed the political economy of the potential re-uptake of wind propulsion to decarbonize shipping, finding that full decarbonization requires a combination of technological innovation and reduced demand for transport services [39,40], whereby he joins the "sufficiency" school of climate governance [41].

There is a small but increasing body of literature on policy processes for decarbonizing maritime shipping in the IMO and the EU. The EU had a leading role in the process leading to adoption of the IMO initial climate strategy, resulting from (i) setting a clear objective for action in the IMO to reduce GHG emissions from international shipping, (ii) the building of entrepreneurial coalition, and (iii) mounting momentum for action in the IMO [42]. The leadership of the EU in forming international environmental agreements has attracted attention among scholars [43]. The EU holds normative power, but concerns are raised, particularly by nations in the Global South, about EU leadership being a form of "soft imperialism", where the EU tells other states how to deal with climate change [44]. There are also tensions between EU internal policy coherence and EU's aspiration to be a leader in global environmental governance. Credibility is essential to enhance persuasion. The EU must live up to its own ambitious standards to be able to persuade others to follow [45]. The 'European Green Deal' (EGD) presented by the European Commission (EC) in 2019 [46], the subsequent adoption of the FEUM regulation [21], and the inclusion of shipping in EU ETS in 2023 [22] are means for the EU to show such "exemplary leadership" [47,48]. Also focusing on influential actors, von Malmborg analyzed the strategies of the EC and Transport & Environment (T&E), the European confederation of green mobility NGOs, as policy entrepreneurs in the policy process leading to the adoption of FEUM [48]. Through extensive coalition-building and successful problem and policy framing, T&E gathered enough support to stand the grounds against heavy lobbying from incumbents and raise the ambition of the FEUM regulation. In a related study, von Malmborg identified and analyzed the beliefs of two advocacy coalitions in the policy process on FEUM, one stalling policy change and one advocating disruptive change [49]. The co-legislators reached consensus on a middle-ground after negotiations in a bargaining mode. Negotiations through bargaining instead of deliberation hampered policy learning across the two coalitions [50].

1.3. Aim of the Paper

Similar to von Malmborg [48,49], this paper aims to critically analyze the policy process and politics in the EU on decarbonizing maritime shipping. It focuses on FEUM, a highly interesting case of decarbonization and clean energy transition to reach the EU target of climate neutrality. It is the first legislation ever for stimulating uptake of LoZeC fuels and decarbonizing maritime shipping. It represents a policy domain with several vested interests and nested policy domains, e.g., climate policy, energy policy, transport policy, industry policy, innovation and technology policy, agricultural policy and forestry policy [51], providing insights on variety of interests from politics, business and civil society.

A traditional approach to analyzing policy, particularly in economics, is to focus on effects and cost-effectiveness. From a political science perspective, the focus is more on the policy processes; power relation in politics; the narratives, discourses and argumentation attached to meaning-making; the framing of problems encountered in society; different policy options; and the ambiguities of policymaking [52–54]. As discussed by von Malmborg, EU politics on decarbonizing shipping is an "argumentative struggle" in which different policy actors try to persuade others to see problems and policy solution according to their perspectives to gain monopoly on the framing and design of policies. [48,49]. To understand policies for decarbonizing maritime shipping, such as FEUM, one must understand the meanings and politics of the policy, cf. [55]. Such analysis could further our understanding of the politics of a just clean energy transition more broadly, cf. [28,56,57]. There are only few studies on the politics related to the decarbonization of maritime shipping, e.g., [19,20,39,40,42,48–50], but none analyzing in-depth how different policy actors engage in giving meaning to the concept of "decarbonizing maritime shipping" as a basis for

adopting legitimate policies. Such knowledge is important for understanding why policies are designed in the way they are. This paper aims at filling this research gap, and thus complements previous studies on the policy process of FEUM, using the "multiple streams framework" (MSF) and the "advocacy coalition framework" (ACF) as theoretical lenses, focusing on the roles and agency of policy entrepreneurs and beliefs of different advocacy coalitions [48,49]. Applying argumentative discourse analysis [52] in combination with theory on discursive interaction strategies and discursive agency [58,59], tapping into the conversation on decarbonizing maritime shipping, this paper analyzes the following research questions:

- How did the meaning of decarbonizing maritime shipping evolve?
- What storylines and discourses have framed the policy debate?
- What conflicts and coalitions have been present in the policy debate?
- How have different policy actors interacted and communicated to agree to structure and institutionalize a common discourse that could frame a broadly legitimate policy in a landscape of competing discourses?

2. Discourse Analysis as a Theory of Politics and Policymaking

Simply put, politics is about translating values into narratives about problems and viable policy solutions, which are further developed and concretized into political proposals on goals, strategies and policy instruments. These are situated within discursive frames, i.e., cognitive and normative structures that affect and limit social actors [54]. Discursive framing is central to politics and the policy process, i.e., the process of public policy and the complex interactions involving people and organizations, events, contexts and outcomes over time [53,60].

Discourse analysis is increasingly used for analyzing environmental policy. Hajer and Dryzek, both pioneers in environmental policy discourse analysis, assert that discourses frame the understanding and action of policy actors on the social or physical phenomena debated and negotiated in policymaking [52,53]. Discourse analysis "offers a reflexive understanding of 'the political' and transforms the practice of policy analysis" [61] (p. 169). Discourse analysis has increasingly been used to analyze EU politics [54,62], including EU environmental, energy and climate politics [28,63–65].

Most discourse analysis approaches assume that our conceptions of "real-world" phenomena are socially constructed in processes of meaning-making depending on language use and social practices [52,66–69]. Besides political science, discourse analysis is applied in, e.g., sociology, human geography and business studies. In political science, the use of discourse analysis is influenced by various philosophical and disciplinary traditions translated into analytical approaches with different key concepts and methodologies, e.g., argumentative discourse analysis (ADA) [52], deliberative discourse analysis [53], discourse theory [67], and the sociology of knowledge approach to discourse [70]. As mentioned, discourse analysis has been applied frequently in the environmental and energy policy domains, focusing on discourses in policymaking [71]. But it has been less applied in the transport policy domain related to climate.

Studies of environmental policy discourses are mostly based on approaches focusing on sociocultural meaning structures [3,61,72,73], acknowledging that environmental problems are social constructs. These structures are created by interpreting contents of texts (e.g., web pages, position papers, policy proposals, impact assessments, articles in journals, magazines or newspapers), speeches at conferences or in negotiations, or symbolic aspects of actions such as demonstrating innovative technology, related to a policy domain, e.g., climate governance [74,75] or overall structures of environmental policy such as ecological modernization [63]. Concepts such as "climate change", "climate change mitigation", the "clean energy transition", "decarbonization" and "maritime decarbonization", analyzed in this paper, are disputed by different policy actors in a sociopolitical, argumentative conversation for framing and defining knowledge, interpretation, meaning and implementation.

Hajer defines *discourses* as "a specific ensemble of ideas, concepts, and categorizations that are produced, reproduced, and transformed in a particular set of practices and through which meaning is given to physical and social realities" [52] (p. 44). A discourse defines the understanding of specific problems and policy options but also practices in the policy process. Thus, discourses are key to the development and communication of political claims of the "truth" and the positioning of policy actors for or against policy change in certain directions [76,77].

Discourse analysis includes several conceptual tools that facilitate empirical research. In argumentative discourse analysis (ADA), employed in this paper, the central concepts are discourse, storyline, discourse coalition, discourse structuration and discourse institutionalization [52]. These are used to "overcome static gaps between individuals and institutions and therefore aim to understand how interrelationships are constantly produced, reproduced, challenged, and transformed" [65] (p. 3). *Storylines* are narratives on physical and social phenomena playing a key role in framing knowledge, truth claims, positioning of policy actors and building coalitions of policy actors within a policy domain or policy subsystem [52,72,78]. Thus, they are the vehicles through which the building blocks of physical and social phenomena are framed into defined problems and solutions, hereby given meaning. *Discourse coalitions* are constituted of sets of storylines, the policy actors who acknowledge and communicate such storylines, and who engage in practices consistent with such storylines. Unlike advocacy coalitions, which are based on the collaboration of actors with shared beliefs [79], "discourse coalitions are not necessarily based on shared interests and goals, but rather on shared terms and concepts through which meaning is assigned to social and physical processes and the nature of the policy problem under consideration is constructed" [80] (p. 247). Building on Foucauldian discourse theory [66], Hajer assumes that it is neither possible nor analytically necessary to deduce "beliefs" (a mental/actor-centered category) from discursive events and patterns. Discourse coalitions are formed on shared narratives that are articulated in a condensed form through storylines. What is more, Hajer argues that actors with different beliefs might build a single discourse coalition in case they are able to articulate their distinct perspectives within the same narrative/storyline [52,80].

When policy actors frame the meaning of an issue in diverging terms, they must deal with this difference in further dialectic conversation. Hajer argues that interdiscursive communication through dialogue can revise existing and create new meanings and new identities and help overcome dualities between conflicting discourses, and thus for the discourses to reframe an existing or frame a new policy [52,78]. Interdiscursive communication can change cognitive patterns and create new cognitions and new positionings. Hence, it serves an important role in processes of policy change. Unless a discourse is hegemonic, meaning socially or culturally predominant in the policy debates, no policy actor controls the policy process in full and thus cannot single-handedly impose its preferred framing. Discursive hegemony is reached through (i) *discourse structuration*, through which storylines and policy actors of a particular discourse coalition gain coherence and credibility, and (ii) *discourse institutionalization*, where the narratives used and communicated by actors in a discourse coalition become acted upon and replace previous conceptions of the issue in the policy domain [52,81]. The latter process is facilitated by using resources such as scientific and expert knowledge, political power and legitimacy, and through demonstration projects. Key actors in the policy process, like policy entrepreneurs [48], can induce change of the dominant policy framing and enable policy change under favorable circumstances [82]. For instance, they can utilize various "discursive interaction strategies" or "discursive agency strategies" to discursively (re)frame a policy [58,59].

Drawing on the notion of interdiscursive communication, discourse analysts have recently come to focus on discursive agency [59,77]. Discursive agency can be defined as "an actor's ability to make him/herself a relevant agent in a particular discourse by constantly making choices about whether, where, when, and how to identify with a particular subject position in specific story lines within this discourse" [77] (p. 524). Lynggaard

and Triantafillou propose three overarching types of discursive agency: "(i) manoeuvring within a given discursive framework, (ii) navigating between different and conflicting discourses, and (iii) transforming existing discourses" [59] (p. 1938). They also propose seven strategies for discursive agency that policy actors can use in relation to the general types: "(i) normative power, (ii) manipulation, (iii) exclusion, (iv) multiple functionality, (v) vagueness, (vi) rationalism, and (vii) securitization" [59] (p. 1941).

In discourse maneuvering, policy actors can use normative power to "propagate policy change or stability by strict reference to the normative power of existing hegemonic discourse", or manipulation to "consolidate existing policy by pretending paradigm change" [59] (p. 1941). The outcome of discourse maneuvering is discursive reproduction. In discourse navigation, policy actors can use exclusion "arguing that one discourse is more legitimate than another", multiple functionality "arguing that a policy must accommodate legitimate (but conflicting) discourses", and vagueness ''propagating a policy change by general and vague articulations of discourse(s) downplaying discursive conflicts" [59] (p. 1941). The outcome of discourse navigation is discursive mutation. Finally, in discourse transformation, a policy actor can use rationalism to "invoke novel scientific ideas and findings to challenge and reform an existing policy and discourse", or securitization to "propagate policy change based on another discourse than the hitherto hegemonic one to address a threat to polity survival" [59] (p. 1941). The outcome of discourse transformation is discursive displacement. Which of the seven discursive agency strategies policy actors choose to deploy to influence policy depends on the discursive situation.

3. Methodology

To analyze the meaning-making in the politics on decarbonizing maritime shipping, a qualitative case study approach with a thick description was used [83]. This approach is suitable because the research problems are qualitative in nature [84]. The policy process on the FEUM regulation is used as a case study. It is the world's first legislation to set targets on GHG emission reductions for international shipping. As for discourse analysis, I applied Hajer's argumentative discourse analysis (ADA) [52]. The reason for choosing ADA is that it was developed to study environmental policy and focus on argumentation rather than arguments. As mentioned, previous studies indicate that EU politics on decarbonizing maritime shipping is an argumentative struggle between different actors with competing views on problems and appropriate policy design [48,49], indicating discursive agency in terms of discourse navigation. A diagram illustrating the research process is provided in Figure 1.

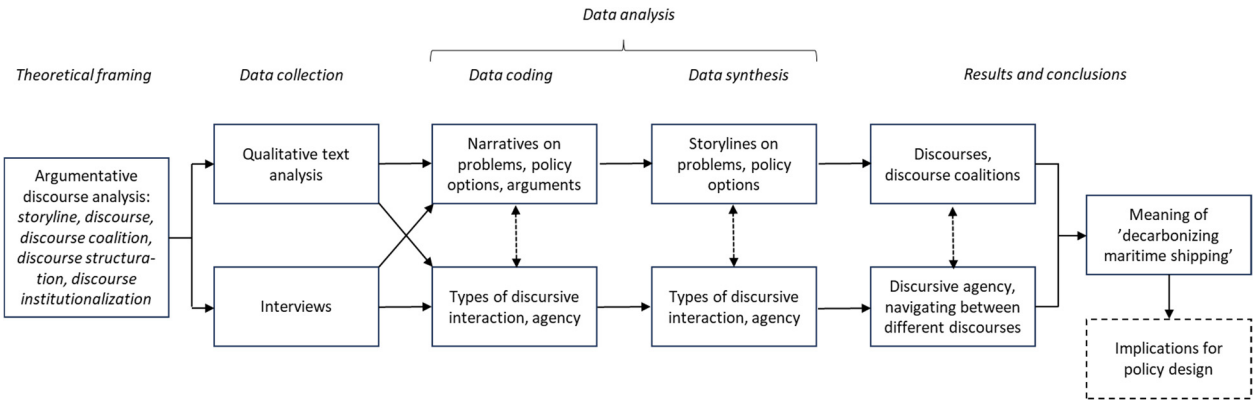

Figure 1. The research process.

3.1. Argumentative Discourse Analysis

This study applies ADA in combination with theory on discursive interaction strategies [58] and discursive agency [59] to analyze the politics in the policy process of FEUM. In comparison to other approaches to discourse analysis, ADA focuses on an argumentative

turn rather than a linguistic turn in policy analysis. Adhering to the view of social and physical phenomena addressed in policy being socially constructed, the language used and the practices in which individuals and organizations as policy actors engage are the subjects to in-depth analysis in ADA. Thus, the argumentative dimension of ADA emphasizes analysis of the verb to "argue", rather than the noun "argument" [52,78]. The analysis of arguments could have been carried out with more traditional approaches to discourse analysis. In comparison, ADA is more about analyzing politics as a play of argumentative "positioning" at particular "sites" of discursive production, tracking how policy actors position each other through use of language or how they are positioned through use of discourses [72,78,85]. The analysis goes beyond the investigation of different interpretations of (technical) facts alone, to combining analysis of the discursive production of "reality", with analysis of the sociopolitical practices engaging actors from which social constructs emerge.

Policy actors can be framed by discourse, but the poststructuralist orientation of ADA shows through the assumption that such framing always happens through a process of (re)creating actor relationships. A key tenet of ADA is its strong empirical focus, and its attempts to explore the different mechanisms in play to (re)produce political "realities" specific to a certain policy issue. Policy discourses bring together various policy actors who hold their own legitimate views and understandings and modes of communicating or engaging in a policy issue, and ADA aims to uncover these relationships. By focusing on the linguistic strategies, i.e., the argumentation that actors mobilize in public dialogue over environmental decision-making, ADA sheds light on the contextual factors in which policy strategies emerge.

3.2. Notes on Data Collection and Data Analysis

This study focuses on politics, discourses and discursive agency in supranational policymaking in the EU. Thus, it analyzes the storylines, discourses, discourse coalitions and discursive agency of policy actors at different levels of EU policymaking. This study focuses on the EC as agenda-setter, the Council and the EP as co-legislators, the governments of 27 member states (MSs) in the Council, companies, business associations, environmental organizations, think tanks and other interest groups (IGs) related to the shipping value chain. This approach is justified by the fact that they are all part of the multilevel governance setting of policymaking processes in the EU as a polity [86–88]. Many studies of coalitions in the EU exclude the EC, MSs, the Council and the EP, and focus on coalitions of IGs only. This gives knowledge about the ones trying to influence the decision-makers, but it tells little about the storylines, discourses and coalitions among the actors that finally decide on EU policy. Thus, it is relevant to include the EC, the Council and the EP, as they often "speak" for different discourse coalitions in the final negotiations. It is also relevant to include the governments of MSs since they are the ones that should transpose EU law into national legislation and are actively influencing the EC, the EP and other MSs in the Council. MSs constitute the Council, one of the co-legislators. However, narratives and storylines of an MS government are often the results of national negotiations and can change with the next election, which can be held during an ongoing negotiation. The case is similar for the EP, where negotiations take place between party groups and committees, and elections are held every fifth year. As an example, the EP has been strong on climate policy in the last decades [89,90], but there is increasing support for climate deniers in the upcoming EU elections in spring 2024. The European far-right is negatively polarizing and currently waging a "cultural war" on ambitious EU-level climate policies [91].

The EP consists of 705 Members of the EP (MEPs), belonging to seven party groups: the European People's Party (EPP, Christian democrats/conservatives), Progressive Alliance of Socialists and Democrats (S&D, social democrats), Renew Europe (liberals), Greens/European Free Alliance (Greens/EFA, greens), European Conservatives and Reformists (ECR, populist nativist conservatives), Identity and Democracy (ID, populist nativists), and the Left (GUE/NGL, left). MEPs are elected every five years. The last elections to the EP were held in June 2024, with the EPP as the largest party (26.3%), S&D

(18.9%) in second place, followed by ECR (11.5%), Renew Europe (10.3%) and ID (8.1%). The president and commissioners of the EC are usually former national ministers appointed for five-year terms. The governments of EU MSs and the EP approved the current president of the EC Ursula von der Leyen (Germany, Christian democrat) and the commissioners, including transport commissioner Adina Vălean (Romania, national liberal), in autumn 2019. They entered office in November 2019. A new president of the EC and new commissioners will be approved and enter office during autumn 2024.

Data were collected using a mixed method approach combining qualitative text analysis and semi-structured interviews. As for texts, data were collected from official and confidential documents presenting positions of different policy actors, such as (i) policy papers from the EC (Directorate-General for Transport (DG MOVE), (ii) positions of the Council and MSs, (iii) positions of the EP and its party groups and committees, (iv) reports and policy papers from T&E as policy entrepreneur on FEUM, (v) IG's responses to the public consultation on FEUM and IG's position papers, and (vi) editorials, open editorials and articles in newspapers and magazines (Table 1). In all, 83 text documents and one online conference video were analyzed.

Table 1. Documents analyzed.

Policy Actors	Documents
European Commission	Strategy for integrating maritime transport emissions in the EU's GHG reduction policies [92] European Green Deal [46] Climate target plan [93] Fit for 55 package. https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/delivering-european-green-deal/fit-55-delivering-proposals_en (accessed on 10 May 2024) EC proposal for FEUM [94] EC Regulatory Impact Assessment for FEUM [95] EC proposal for including shipping in EU ETS [96] EC Regulatory Impact Assessment for including shipping in EU ETS [97] Fit for 55 on all fronts? Can Europe lead innovation in green maritime? Online conference organized by *Euractive* on 23 September 2021. https://www.youtube.com/watch?v=7ls1zFOpsPYc (accessed on 10 May 2024) [98] "Lack of green maritime fuels makes liquid natural gas a necessity says Commission" [99]
Transport & Environment (T&E)	FuelEU Maritime public consultation: Detailed T&E briefing [100] "FuelEU Maritime: Analysis and recommendations. How to drive the uptake of sustainable fuels in European shipping" [101] "Arbitrary exemptions leave many heavily polluting ships unregulated" [102] "Broad industry-NGO coalition calls for EU hydrogen quota for shipping" [103] "Joint open letter to the European Parliament and the Council" [104]
Interest groups	Answers to the EC public consultation on FEUM [105] Lobbying FuelEU Maritime [106] CLIA Europe statement on "Fit for 55" [107] "FuelEU Maritime—Avoiding Unintended Consequences". Report by European Community Shipowners' Associations (ECSA) and International Chamber of Shipping (ICS) [108] SEA Europe position paper on FuelEU Maritime Regulation. [109] World Shipping Council position paper on FuelEU Maritime [110] "Getting to Zero Coalition: Europe can be a global leader in shipping decarbonization" [111] Seas at Risk: "Shipping is not Fit For 55—with only months left for the EU to get it right" [112] Position statement by the eFuel Alliance on the European Commission FuelEU Maritime proposal: Green European maritime space [113] Joint statement by ECSA and T&E on FuelEU Maritime, 31 May 2022. https://www.ecsa.eu/news/joint-statement-ecsa-and-te-fueleu-maritime (accessed on 10 May 2024) Joint Statement of ECSA, European Waste-Based and Advanced Biofuels, eFuel Alliance, the Advanced Biofuels Coalition and GoodFuels on FuelEU Maritime, 1 June 2022. https://www.ecsa.eu/news/joint-statement-ecsa-ewaba-efuel-alliance-advanced-biofuels-coalition-and-goodfuels-fueleu (accessed on 10 May 2024) "Ambitious marine fuel standards: Tackling climate change and developing business opportunities". Joint open letter by Danish Shipping and others to the European Parliament, European Commission and the Swedish Council Presidency, 9 December 2022. https://www.worldshipping.org/statements/ambitious-marine-fuel-standards (accessed on 10 May 2024) ECSA statement on the FuelEU Maritime negotiations, 15 February 2023. https://www.ecsa.eu/news/ecsa-statement-fueleu-maritime-negotiations (accessed on 10 May 2024) World Shipping Council statement on the FuelEU trilogue completion, 23 March 2023. https://static1.squarespace.com/static/5ff6c5336c885a268148bdcc/t/641c1eecc29eac3f1b4596e3/1679564525333/WSC+statement_+FuelEU_Trilogue_completion.pdf (accessed on 10 May 2024)

Table 1. *Cont.*

Policy Actors	Documents
Member states and the Council	Reports of the Permanent Representation of Sweden to the EU to the Government Offices of Sweden from 38 meetings in the Council shipping working party (September 2021 to March 2023), the transport ministers' meeting in June 2022., and two meetings of the Committee of Permanent Representatives (COREPER). Joint statement by Austria, Belgium, Denmark, Germany, Ireland, Luxemburg, the Netherlands and Sweden on the FuelEU Maritime, 2 June 2022. https://archief27.sitearchief.nl/archives/sitearchief/20230906150753/https://www.permanentrepresentations.nl/binaries/nlatio/documenten/publications/2022/06/02/joint-statement-on-fueleu-maritime/Statement+TTE+-+FuelEU+Maritime.pdf (accessed on 10 May 2024) Council general approach on the proposal for FEUM [114]
European Parliament	Draft report on the proposal for FEUM [115] Amendments on the proposal for FEUM of the EP Committee on Transport and Tourism [116] EP amendments on the proposal for FEUM [117] "Parliament backs EU's maritime fuel law to curtail shipping emissions" [118] "FuelEU Maritime deal lets shipping off the hook" [119]
Trilogue negotiations	Reports of the Permanent Representation of Sweden to the EU to the Government Offices of Sweden from eight inter-institutional technical meetings and two political trilogue meetings of the Council, the EP and the EC

Decision-making in the Council and interinstitutional trilogue negotiations between the Council, the EP and the EC is secluded [120,121], and it is hard for scholars to obtain access to the negotiations for data collection. Hence, most research on EU policymaking draws on voting results in the Council and the EP. In this study, collaboration with the Swedish Ministry of Infrastructure, responsible for transport policy, made it possible for the author to obtain access to reports on negotiations in the Council shipping working party and trilogues sent by Sweden's Permanent Representation to the EU to the Ministry of Infrastructure. Access to Sweden's reports is relevant since Sweden held the Council Presidency during final trilogue negotiations on FEUM and was the one making the deals with the EP on behalf of the 27 MSs in the Council. Access to confidential information for research purposes is generally very rare [65,122] but provided a unique opportunity to analyze views and changes in views as well as the argumentation of different actors and the co-legislators during negotiations in the Council and the trilogues. This is a methodological merit, which gives possibilities to analyze the argumentation and discursive agency of different actors in more detail. The likelihood that the findings based on Sweden's reports would be systematically affected by bias is judged to be limited. Officials from the Swedish Permanent Representation should have no incentives to falsely convey the positions of other EU MSs, the EC or the EP to the Government Offices of Sweden, since those positions are used to formulate Swedish negotiation strategies in the Council, and negotiation strategies in the trilogue negotiations as Council Presidency.

To identify additional views and narratives of companies, business associations, environmental organizations and think tanks, searches were made using Google. Searches were made for "fueleu+maritime", "shipping+decarbon*", "maritime+decarbon*", "shipping+decarbon*", "fueleu+maritime+compan*", "fueleu+maritime+ngo", "electrofuels+eu" and "rfnbo+eu".

To get a better understanding of positions and narratives of key actors in the policy process, but more particularly the argumentative turns and discursive agency of these actors, the qualitative text analysis was complemented with five interviews with key individuals at the most important organizations in the case, the EC, T&E, the EP and the Council (Table 2). The use of different data sources catered for validation. The EC and T&E where the main architects, the policy entrepreneurs, behind the competing proposals in the policy process on FEUM [48]. In addition to interviews with these actors, interviews were also held with representatives of the Council and the EP as co-legislators. These were the transport attaché of Swedish Presidency of the Council, and the lead political assistants of the EP rapporteur on the FEUM file. These two persons were spokespersons for the Council and the EP at a "technical" level and key in the interinstitutional negotiations between the Council and the EP, as most negotiations were held at this level. They provided the political lead negotiators with technical, strategic and tactical policy advice for the political

negotiations leading to agreement and adoption of the FEUM regulation. The EP and the Council are the co-legislators in the EU, and the ones that must reach consensus on a policy. The Swedish transport attaché also acted as chair of the Council transport working group during final trilogue negotiations, consolidating positions of MSs.

Table 2. Interviews.

Organization	Interviewees	Interview Conducted
European Commission	Head of Unit, DG MOVE	March 2023
	Policy officer, DG MOVE	March 2023
European Parliament	Political assistant to the rapporteur	March 2023
Transport & Environment	Policy officer	August 2022
Permanent Representation of Sweden to the EU (Council)	Transport attaché	March 2023

The qualitative text analysis of the written and audiovisual material was performed manually and searched for views and narratives of various policy actors (mainly as collectives) on the decarbonization of shipping, alternative shipping fuels, RFNBOs, electrofuels and policy design related to the FEUM regulation.

First, data were coded as types of narratives or types of discursive interaction. Actors' views and narratives on problems, including levels of emission reductions required, were consolidated and categorized as problem storylines (PROB1–PROB4). Views and narratives on scope of the policy and overall approaches to and design elements of policies were consolidated into different storylines and categorized as policy storylines related to the specific policy domain (POL1–POL10). Maturity was reached when no more new or contradictory views or narratives were identified to add to existing storylines or constitute new ones. Validation was carried out through triangulation using different sources of data (text, video, interviews). In general, narratives and storylines on policies were related to specific design elements of policies. Dichotomies of narratives and storylines were grouped as lines of dispute in two dimensions related to the emergency of the problem, and the associated need for stronger or weaker policy, making it possible to group storylines into discourses. Storylines related to wide scope, technological specificity and radical change are considered to advocate stronger policy, while storylines related to narrow scope, technology neutrality and incremental change are considered to advocate weaker policy. The policy actors were then plotted in a matrix using a mix of "clustering" and "storylines as relations" [123] to find out who shared which storylines and who belonged to the different discourse coalitions.

Since both FEUM and the EU ETS shipping address GHG emission reductions from ships to and from ports of call in the EU, irrespective of flag state, it could be expected that shipping companies, flag states and countries dependent on exports and/or imports to/from the EU would have made attempts to influence EU policy. But no official documents with positions on FEUM of such countries or actors was found in web searches with Google, and no advocacy from such countries or actors were directed towards the Swedish Presidency before or during the trilogues. However, the EC declares in the impact assessment on EU ETS that some third-country actors were critical towards including extra-EU shipping in EU ETS [97], but no such statement was included in the impact assessment on FEUM [95]. Due to EU transparency rules on lobbying, all organizations that have lobbied and provided input to the EP's reports are listed in the reports. From the reports of the EP rapporteur and the EP on FEUM [115,117], it is found that all organizations were European IGs and companies, except the international business organization for liner shipping, World Shipping Council (WSC), based in Washington DC. More non-EU actors (companies, IGs and academics) responded to the EC's public consultation on FEUM, 13% of total responses in all [105]. Of these, half came from the UK. Other countries represented were Norway, the United States, Türkiye, Hong Kong, Switzerland, Canada, and Brazil. Surprisingly, no actors from the world's largest flag states, i.e., Liberia, Panama and the

Marshall Islands [4], responded to the public consultation. Hong Kong is the fourth largest flag state. Various international environmental NGOs (ENGOs) were also active in the policy process, collaborating with T&E. WSC, respondents to the public consultation, and ENGOs are all included in the analysis. In all, had more non-EU actors been involved in the policy process or if secluded advocacy of third countries and third-country organizations could be identified, narratives and storylines identified, and the composition of discourse coalitions could have looked different.

4. EU Policy for Decarbonizing Maritime Shipping

Shipping is a key sector for the EU economy. About three-quarters of all international trade in and out of the EU is carried by sea, and the sector contributed EUR 149 billion to EU gross domestic product and two million jobs in 2020, of which 685,000 were at sea [124,125]. The EU fleet consists of 23,400 vessels and constitutes 39.5% of the world fleet. The European shipping industry is diversified and includes transportation of goods by sea, transport of people by sea, service and offshore support vessels, and towing and dredging at sea. Freight transport, including towing and dredging (53%) followed by passenger transport (37%) are the two largest segments regarding employment [125].

Indicators have shown that rising GHG emissions from maritime shipping is problematic. The EU shipping sector emitted 138 million tons CO_2 in 2018, corresponding to some 11% of all EU transport carbon dioxide emissions and 3–4% of total EU carbon dioxide emissions [95]. In 2022, the EU flag states with the highest GHG emissions (world rank in parentheses) were Malta (5), Denmark (9), Greece (10), Portugal/Madeira (11), Cyprus (12) and Italy (13), while ships operated by Greek companies emitted the most [4]. The GHG emissions from EU maritime transport (i.e., emissions from intra-EU routes and incoming and outgoing routes), increased by 48% between 1990 and 2008 [91]. In the same period, total GHG emission in the EU decreased by 11%, while the share of emissions from shipping rose. GHG emissions from EU shipping are expected to further increase by 51% by 2050 compared to 2010 levels if no policy instruments are adopted. This can be compared to the EU target of net-zero emissions by 2050. The current fuel mix in the maritime sector is made up of >99% fossil fuels [95,97]. This is due to lack of incentives for operators to reduce GHG emissions and a lack of mature, affordable and globally utilizable LoZeC fuels in the sector.

The issue of decarbonizing the EU maritime sector entered the EU policy agenda with the 2013 strategy for integrating maritime transport emissions in the EU's GHG reduction policies [91]. However, prior to FEUM and the inclusion of shipping in EU ETS in 2023, international shipping was the only mode of transport not included in the EU's commitment to GHG emission reductions [24]. In the 2013 strategy, the EC proposed a three-staged approach [91]:

1. Requirements for ships to monitor, report and verify GHG emission;
2. Setting a GHG target for shipping;
3. Introducing policy instruments to reach the target.

The first stage included establishment of the EU regulation on monitoring, reporting and verification of emissions of additional GHGs and emissions from additional ship types, first adopted in 2015 and revised in 2023 [126]. The second stage included the indicative target to reduce GHG emissions from the transport sector by 90% by 2050, included in the Climate Target Plan [93].

The third step was the proposal in the 'Fit for 55' package to establish the FEUM regulation [94] and include shipping in EU ETS [96], both adopted in 2023. This step was part of implementing the EGD, which was presented in December 2019 by the newly instated President of the EC, Ursula von der Leyen, as a response to the climate and environmental challenges facing the world, manifested in the United Nations Paris Agreement on climate change. The EGD is the EU's climate plan and green growth strategy up to 2050. As part of the EGD, a new 'European Climate Law' (ECL) was adopted in July 2021 [127], stating that EU greenhouse gas (GHG) emissions shall be reduced by 55% by 2030, and that the EU will

be climate-neutral by 2050. To realize these targets, EC presented the Fit for 55 legislative package in July 2021, including proposals on FEUM and EU ETS shipping. As for the EU ETS and FEUM, the purpose was to make maritime shipping contribute to reaching the EU's new climate targets by setting a price on GHG emissions from maritime shipping and requiring the shipping sector to use LoZeC fuels and reduce GHG emissions [94–96].

After a combination of deliberative negotiations and bargaining, the Council and the EP reached a political agreement on FEUM on 23 March 2023 [48,49]. FUEM was formally adopted by the EP and the Council in July 2023 [21], establishing the world's most ambitious legislation to stimulate deployment of LoZeC fuels and decarbonizing maritime shipping, beyond the borders of the EU. In short, FEUM encompasses the following:

- The intensity of GHGs (including carbon dioxide, methane and nitrous oxide) from shipping "well-to-wake" (meaning GHG emissions from the entire life cycle of fuels, from extraction to use onboard ships) should be reduced by 2% from 2025, 6% from 2030, 14.5% from 2035, 31% from 2040, 62% from 2045 and 80% from 2050;
- A multiplier of 2 can be applied when using RFNBOs to reduce GHG emission intensities. A sub-quota of 2% for RFNBOs will be adopted by 2034, if an EC analysis shows that the RFNBO market is not sufficiently developed by 2031, i.e., RFNBO share of total fuel demand is <1%;
- Ships shall connect to an onshore power supply when moored in EU ports of call, unless they can demonstrate that they use an alternative zero-emission technology;
- Ships shall pay a FuelEU penalty if the above requirements are not met.

These requirements apply to ships above 5000 gross tonnage and encompass 100% of their intra-EU voyages and 50% of their voyages between EU ports of call and ports of call located in third countries. The threshold of 5000 gross tonnage covers 55% of all ships calling ports in the EU, which are responsible for 90% of GHG emissions.

5. Results and Analysis

5.1. Storylines and Argumentation

The following subsections present the storylines and argumentations identified related to problem framings and related framings of policy options of different policy actors. How a condition is framed as a problem influences how we think about the problem [128]. This enables coupling to certain policies, but not to others [129]. As summarized in Table 3, this case identified fourteen storylines, four on the problem framing (PROB1–PROB4) and ten on policy framing (POL1–POL10). They evolved in a dialectic conversation, between primarily between the EC and T&E. T&E responded to the narratives of the EC by presenting counter-narratives. Taken together, they constitute two competing discourses (see Section 5.2), providing two different meanings of "decarbonizing maritime shipping". The main lines of conflict in the negotiations between the co-legislators related to the framing of the problem (including competitiveness, levels of emission reductions and views of maritime fuels), the basic nature of the policy instrument (technology-neutral or technology-specific), and the allocation of revenues from penalties. Storylines and argumentation related to these elements are presented and discussed in the following subsections.

Views also differed in the addressees and scope of the regulation, but these were not as decisive for the design of the FEUM regulation and easily reconciled. For instance, the EU regulation on monitoring, reporting and verification of GHG emissions from ships does not include ships below 5000 gross tonnage at the moment. Thus, there is no legal basis now and no data to include smaller ships in FEUM. The situation was identical for the introduction of shipping in the EU ETS. Sentiments for taking account for national/regional conditions were found not only in the Council, but also in the EP, and were easily resolved, which rendered some temporal exemptions.

Table 3. Storylines identified among actors in the EU policy domain on decarbonization of maritime shipping.

Policy Issue	Storylines Related to Strong Policy	Storylines Related to Moderate Policy
Views on climate change, emission reductions and competitiveness	PROB1: Climate change is an emergency, and all sectors must decarbonize. Climate neutrality 2050 is the goal. Emission reductions must be on par with the Paris Agreement targets, and thus be reduced significantly, also from a short-term perspective. High ambitions are important for the EU shipping sector to increase competitiveness, and for EU and MSs to gain credibility in the discussion on a global regime for decarbonizing shipping. A level playing field is important.	PROB3: Climate change is a threat to our economies and all sectors must reduce emissions, but economic growth must not be jeopardized. The shipping sector is global, and the competitiveness of the EU shipping industry must be protected by a level playing field.
Views on maritime fuels	PROB2: All fossil fuels must be banned, and use of the most effective zero-emission fuels must be drastically increased.	PROB4: Emission reductions should be moderate, as there is a lack of supply of LoZeC fuels for the moment. The use of fossil fuels must be reduced, but liquified natural gas is a necessary transition fuel, despite it being a fossil fuel. Cost increases for the shipping industry should be moderate.
How should the EU stimulate the innovation of green shipping fuels?	POL:. Innovation is facilitated by technology-specific policies. To stimulate decarbonization of maritime shipping. Technology-specific sub-quota (2–6% and increasing) and high multiplier (2–5) for RFNBOs	POL6: Innovation is facilitated by technology-neutral policies. To stimulate decarbonization of maritime shipping, a technology-neutral, goal-based approach with no sub-quota or multiplier for RFNBOs should be used.
Addressees of the regulation	POL2: Requirements on shipping companies should be complemented with requirements on fuel suppliers to ensure that fuel suppliers in European ports deliver compliant fuels to ships in sufficient quantities	POL7: There is contractual freedom. FEUM should not include requirements on fuel suppliers. This can be dealt with in the EU Renewable Energy Directive.
Scope of the regulation	POL3: Ships above 400 gross tonnage should be included to cover as many ships and emissions as possible. POL4: Exemptions shall be limited in scope and time to safeguard the integrity of the policy.	POL8: Ships above 5000 gross tonnage should be covered to start with as the only these ships are covered by the EU regulation on monitoring, reporting and verification of emissions. POL9: Exemptions must be made to account for regional differences—such as passenger shipping to small islands and remote areas, ice-classed ships and navigation through ice—and render the policy legitimacy in MSs.
How should incomes penalties be allocated?	POL5: Incomes from penalties should be allocated to an EU fund for financing innovation related to decarbonization of shipping. An EU fund will pool resources to finance innovation of the most promising technologies by economics of scale, giving highest return on investment.	POL10: Incomes from penalties should be allocated to MSs for financing innovation related to the decarbonization of shipping. MS funding safeguards financing innovation of technologies most pertinent from national perspectives.

5.1.1. Problem Framing

All policy actors agreed that the main aim of the FEUM regulation was for the shipping sector to contribute to meeting the EU target on climate neutrality by 2050. However, views differed on the nature and urgency of the problem and thus to what extent GHG emissions should be reduced to 2050 and interim checkpoints in 2030, 2035, 2040 and 2045.

Moderate Emission Reductions to Manage the Threat of Climate Change

According to the EC and incumbents in the maritime and fossil fuel industries, climate change is a threat to our economies and all sectors must reduce emissions, but competitiveness and economic growth must not decrease. EU policy to decarbonize shipping must consider the fact that shipping services in the EU and between EU and third countries can be provided by operators from all over the world. They claimed that the global nature of the sector underlines the importance of flag neutrality and a favorable regulatory framework, which would protect the competitiveness of EU ports, ship owners and ship operators [108]. A level playing field for ship operators and shipping companies in terms of levelized costs for shipowners and ship operators is critical to a well-functioning EU shipping market [94]. This implies that not only intra-EU voyages should be covered by EU policy, but all ships making port calls in the EU. The need for a level playing field was not disputed in the policy domain, but views differed on what is meant by "competitiveness".

In its 2020 Climate Target Plan (CTP), the EC argued that GHG emissions from the transport sector must be reduced by 90% by 2050 to achieve climate neutrality in the EU by 2050 [93]. All transport modes, including shipping, must contribute to the efforts. The technological development and deployment necessary to reach the targets should already have been implemented by 2030 to prepare for much more rapid change thereafter. In its proposal for the FEUM regulation, the EC argued that "renewable and low-carbon fuels should represent 6–9% of the maritime transport fuel mix in 2030 and 86–88% by 2050 to contribute to the EU economy wide GHG emissions reduction targets" [94] (p. 1). An important framing condition for the EC was that the costs of LoZeC fuels are high and will remain high for decades, and that current supply is limited. Stimulating further innovation for decarbonizing maritime shipping through lower costs of alternative fuels will maintain the competitiveness of the sector—both at global level by ensuring the operation of trade links, and at EU level through continuous quality leadership [91].

As for the ambition of GHG emission reductions in the FEUM regulation, the EC proposed moderate GHG intensity targets for 2025–2050 [94]: −2% from 2025, −6% from 2030, −13% from 2035, −26% from 2040, −59% from 2045 and −75% from 2050. When developing the FEUM regulation, the EC wobbled the targets to allow time for the fossil fuel industry to switch from oil to liquid natural gas (LNG) and the green fuels industry to increase production:

> "*We have made a conscious choice to start with maybe a lower ambition level, to give time to the market to develop and to ensure that in time these necessary quantities of green fuels will be available to everyone who needs them*", said Roxana Lesovici, a member of the cabinet of EU transport commissioner Adina Vălean, speaking at a Euractive conference on green innovation in the maritime sector in September 2021 [98].

One-Hundred Precent Emission Reductions to Manage the Climate Change Emergency

In dialectic response to the above problem framing, ENGOs and progressive companies in the maritime value chain, led by T&E, stressed that climate change is an emergency, and that GHG emissions must be reduced in alignment with the Paris Agreement targets, and thus also be significantly reduced from a short-term perspective. All fossil fuels must be banned, and use of the most effective alternative fuels, i.e., RFNBOs, must be drastically increased. Thus, T&E, together with *Seas at Risk* (SaR), an association of ENGOs dedicated to marine protection, and the *Getting to Zero Coalition* (GtZC), called on the EU legislators to set a clear target for zero-emission shipping by 2050 [100,101,111,112]. The new policy must work towards achieving the EU target of climate neutrality by 2050. The *Getting to Zero Coalition* is a partnership between the *Global Maritime Forum* and the *World Economic Forum*, aimed at accelerating the rollout of deep-sea zero-emission vessels powered by zero-emission fuels. More than 150 companies have joined the coalition. Leaders of companies and ENGOs in GtZC stated that:

> "*As the EU member states already support full decarbonization of international shipping by 2050 in the IMO, setting this target at home would also strengthen the EU's position globally and drive progress towards global regulation. Emission reductions should be 100% in 2050*" [111] (unpaginated online article).

As for the ambition of the FEUM regulation, T&E and allies proposed much higher and steeper GHG intensity reduction targets for 2025–2050: −6% from 2025, −15% from 2030, −26% from 2035, −59% from 2040, −95% from 2045 and −100% from 2050 [101,102].

In the Council, most MSs supported the EC's proposal on moderate GHG targets. However, Austria, Belgium, Denmark, Germany, Ireland, Luxemburg, the Netherlands and Sweden emphasized, in a joint statement at the EU transport ministers' meeting in Luxemburg on 2 June 2022, that FEUM should be more ambitious, providing a proactive legislative framework to reduce GHG emissions from the sector, meeting the target of climate neutrality by 2050. They stressed a need for higher ambitions on demand side use of LoZeC fuels to strengthen the competitiveness of the EU maritime sector, and to provide reliable planning conditions for fuel suppliers, ship owners and operators. Higher ambitions are also needed to maintain EU and MS credibility in their efforts to promote an ambitious global climate strategy within the IMO, which is crucial to maintain a level playing field.

In the EP, FEUM was handled by the Committee on Transport and Tourism (TRAN), in combination with the Committee on Environment, Public Health and Food Safety (ENVI) and the Committee on Industry, Research and Energy (ITRE). Mr Jörgen Warborn (Member of the EP (MEP) from Sweden), representing the European People's Party (EPP), was holding the lead as TRAN's rapporteur. The responsible committee of the EP appoints an MEP, a so-called rapporteur, to draft a report with amendments to the EC proposal. The rapporteur also acts as the EP's lead negotiator in trilogue negotiations between the EP, the Council and the EC. In his draft report, Warborn supported the ambition level for reduced GHG intensities proposed by the EC [115]. However, the ENVI committee, the Greens, the Lefts, Social Democrats (S&D) and Renew Europe (liberals) argued for higher ambitions. After negotiations between the party groups, TRAN adopted the draft report with amendments [116]. While keeping the EC's proposed cuts for 2025 and 2030, TRAN introduced higher cuts to GHG intensity from 2035 onwards: i.e., −20% from 2035, −38% from 2040, −64% from 2045 and −80% from 2050 [116]. The EP adopted the final report with support from the EPP, S&D and Renew Europe [117,118]. The file passed without any amendments compared to the TRAN report. The Greens and ENVI opted for a 100% GHG intensity reduction by 2050 in line with the proposal of T&E, with no success. The Greens' shadow rapporteur in TRAN, MEP Jutta Paulus, criticized the rejection of the amendments proposed by Greens and ENVI:

> "*A majority of conservatives, liberals and social democrats in the EP wants to relieve the shipping industry of its obligations in climate and environmental protection, although the EU officially advocates stricter requirements on the international stage*" [119] (unpaginated online article).

5.1.2. Policy Framing

In the public consultation, most stakeholders (95%) confirmed [105] that it is "very relevant" or "relevant" to enhance the uptake of LoZeC fuels and diversify the fuel mix of maritime transport to speed up the decarbonization of maritime shipping. Most agreed that decarbonizing shipping requires a combination of demand-pull and technology-push types of policy instruments, cf. [33]. Among the latter are further funding possibilities to stimulate innovation, cf. [34], which will be provided by FEUM through using revenues from FuelEU penalties.

Pushing Technology through Funding

A majority of actors, including the EC, the EP, business associations, companies and ENGOs, argued in the FEUM proposal, the EP report and various position papers that

revenues from the penalties should be allocated to an EU-wide fund to finance innovation projects in support of rapid deployment of LoZeC fuels in the maritime sector, by stimulating (i) production of larger quantities of LoZeC fuels, (ii) construction of appropriate bunkering facilities or onshore power supply infrastructure in ports, and (iii) development, testing and deployment of the most innovative technologies in the fleet to achieve significant emission reductions. An EU-wide fund, like the Innovation Fund [94] or a new Ocean Fund [117], would pool EU resources to finance innovation of the most promising technologies by economies of scale, giving highest return on investment.

MSs in the Council had a different view on funding. In dialectic response to the EC proposal, they proposed that innovation projects would better be funded by MSs, who could allocate funding to decarbonization projects that are most innovative from a national perspective. Thus, they argued in unison that penalties should be collected by and allocated to the MSs. The main reason behind this proposal was not that national funding is better for stimulating innovation on LoZeC fuels and new vessels, but rather for MSs to keep some competence in the implementation of FEUM. Since the early days of EU, there has been vibrant debate on subsidiarity and the need for collective action on the EU level to cater for the aim of the EU: European integration. MSs often contest EU energy and climate policy based on sovereignty (subsidiarity), i.e., MSs are better equipped than EU institutions to govern a certain policy issue [89,130,131]. MSs usually want room for maneuvering and flexibility, related to national circumstances. Energy, climate and transport policy have shared competences between MSs and the EU since the entry into force of the Lisbon Treaty in 2009. Transport policy is described in Articles 90–100, climate policy in Articles 191–193 and energy policy in Article 194 of the Treaty on the Functioning of the European Union (TFEU) [132]. In response to the subsidiarity principle, the EC claimed in its FEUM proposal the need for exclusive action on the EU level, with no room for MS flexibility, despite the TFEU stating shared competence:

> "*Without action at EU level, a patchwork of regional or national requirements across EU members states would risk triggering the development of technical solutions that may not necessarily be compatible with each other. /. . ./ As the problem drivers identified in the context of this proposal do not fundamentally differ from one EU member state to another and given the cross-border dimension of sector's activities, these issues can be best addressed at EU level. EU action can also inspire and pave the way to develop future measures accelerating the uptake of alternative fuels at global level*" [94] (pp. 4–5).

Thus, the EC proposed a regulation instead of a directive. A regulation is effective towards the legal subjects (in this case, shipping companies) directly, while a directive must be transposed into national legislation, allowing for MSs to implement EU provisions in different ways. Allocating revenues from penalties to MSs gives them some room for maneuver.

Pulling Demand of LoZeC Fuels

The central element of FEUM is pulling demand by requiring shipowners to use LoZeC fuels. In accordance with neo-classic economic theory [133], the EC held that innovation is best stimulated by technology-neutral policy. Given the array of technologies used in the sector [134] (Christodoulou and Cullinane, 2022), the EC's policy proposal for FEUM suggested that an increased uptake of LoZeC fuels should be stimulated by a goal-based approach, setting technology-neutral GHG intensity reduction targets (see Section 5.1.2), without legislators deciding which fuel(s) to use [94,95]. The EC proposal was heavily influenced by shipping associations and the incumbent shipping and fossil fuel companies [106], arguing that the most effective, zero-emission fuels like RFNBOs are too expensive and that investments in their production are costly and associated with high economic risks and low profits. Industry associations such as the European Community Shipowners' Associations (ECSA), the Cruise Lines International Association Europe (CLIA Europe), the International Chamber of Shipping (ICS), the World Shipping Council (WSC) and FuelsEurope argued that a technology-neutral and goal-based policy, such as GHG

intensity targets, would be more suitable than a requirement to use certain amounts of different LoZeC fuels, e.g., [107–110].

T&E, in collaboration with other ENGOs, business associations and progressive companies from the maritime value chain, had a different view on how to stimulate the innovation of LoZeC fuels, particularly RFNBOs. They argued, in dialectic response, that the technology-neutral approach proposed by the EC and the incumbent shipping and fossil fuel industry will see ship operators choose the cheapest fuel options to cut emissions, i.e., LNG and biofuels, fuels that ENGOs oppose. T&E and allies argued that RFNBOs are key to reduce emissions by 100% and reach decarbonization by 2050. The share of LoZeC fuels must be at least 18% in 2030 and 85% in 2040 [102].

Thus, T&E and allies—such as SaR; members of GtZC; the Clean Air Task Force (CATF), a US-based ENGO pushing for technology and policy changes needed to achieve a zero-emissions planet at an affordable cost; the Environmental Defense Fund (EDF), a US-based ENGO; and progressive companies and organizations—wanted EU legislators to enhance the uptake of RFNBOs via technology-specific measures such as multipliers and mandatory sub-quotas [103,104]. Technology-specific measures are considered the best to stimulate innovation according to evolutionary economic theory [135]. According to, i.a., GtZC, EDF Maersk, Global Maritime Forum, Siemens and Hydrogen Europe, EU legislators should adopt a target of at least 5% scalable zero-emission fuels used in shipping activities by 2030. This would "help make the ensuing rapid scale-up and uptake of RFNBOs commercially viable by 2030, thus making the 2050 energy transition end date within reach" [111] (unpaginated online article). T&E and a large coalition of actors in the maritime shipping value chain recommended EU legislators to go even further through the following measures [103,104,113]:

- Adopt a minimum share of >6% RFNBOs of total fuel use on ship operators from 2030, >12% from 2035, >24% from 2040, >36% from 2045 and >48% from 2050;
- Bridge the cost-competitiveness gap related to other LoZeC fuels via introduction of a multiplier of 5 for RFNBOs.

According to T&E and its allies, high(er) sub-quotas will stimulate market development and deployment of RFNBOs, which is important from a security of supply perspective [101–103]. This could help unlock massive investments and job opportunities in Europe and globally, as well as contribute to making the EU the leading global supplier of zero-emission shipping and fuel production technology. It could also give first mover advantage to the EU hydrogen economy, T&E claimed in tandem with green politicians in the EP [119].

In the Council, most MSs supported the technology-neutral approach of the EC, but Austria, Belgium, Denmark, Germany, Ireland, Luxemburg and the Netherlands, influenced by T&E—who are first movers in green shipping and green shipping fuels—and their progressive national shipping and fuel industries, opted for a multiplier and sub-quota on RFNBOs. Negotiations in the Council led EU transport ministers to agree on a compromise and call for a multiplier of 2 for RFNBOs [114].

The EP was also divided on this issue. EP rapporteur Warborn and the EPP shared the view of the EC and the majority of MSs and proposed a technology-neutral approach [115]. However, the Greens, the Lefts and ENVI, inspired by T&E and the eFuel Alliance, opted for a 6% sub-quota and a multiplier of 5 for RFNBOs [119]. S&D and Renew Europe shared the sentiment of the technology-specific approach but suggested a sub-quota of 2% and a multiplier of 2. After negotiations, the TRAN committee agreed on a multiplier of 2 and a sub-quota of 2% for the use of RFNBOs from 2030 [116]. This was adopted in the EP plenary with support from the EPP, Renew Europe and S&D [117,118].

5.2. Discourses and Coalitions

As presented in Section 5.1, the EU institutions, MSs, party groups, companies and IGs had different views in the discursive framing of problems and suitable solutions for the FEUM regulation. We can identify two strands of storylines developed in dialectic

conversation with each other. Argumentation in each strand developed as the storylines were criticized by opponents. The main lines of dispute, critical for the design of FEUM, were the relative urgency of climate action and associated ambition levels of GHG reductions and the storylines on how to best stimulate the innovation and uptake of LoZeC fuels, particularly RFNBOs.

From analyzing the storylines of different policy actors, two discourses and related discourse coalitions can be identified (Figure 2), focusing on (i) "*technology-neutrality for incremental change to reach moderate emission reductions*" and (ii) "*technology-specificity aiming at transformative change for climate neutrality*". Discourse coalitions include sets of storylines, the actors who adhere to and communicate these storylines, and practices that are consistent with the storylines. The incremental change coalition, which was subordinate in terms of members but dominant in terms of capital invested, comprised EC, most MSs, the EPP, ECSA, WSC, ICS, incumbent shipping companies and the fossil fuel industry. It comprised crisis-oriented and risk-averse companies, mainly aiming at staying within legal compliance, cf. [35]. The transformative change coalition, dominant in terms of number of members but not invested capital, comprised ENGOs like T&E, CATF, SaR and EDF, a small group of MSs, the green-left party groups in the EP, GtZC, the eFuel Alliance and progressive companies from the maritime shipping value chain. In comparison to companies in the incremental change discourse, companies and other actors in this discourse coalition were more process-oriented and proactive, cf. [35]. Shared views and narratives on the policy problem or policy proposal do not necessarily mean that members of a discourse coalition share a similar worldview. This explains why the EPP and most MSs in the Council, having agreed to the EU target on climate neutrality by 2050, were part of the same discourse coalition as the fossil fuel industry. They did not share beliefs, but they shared a set of storylines.

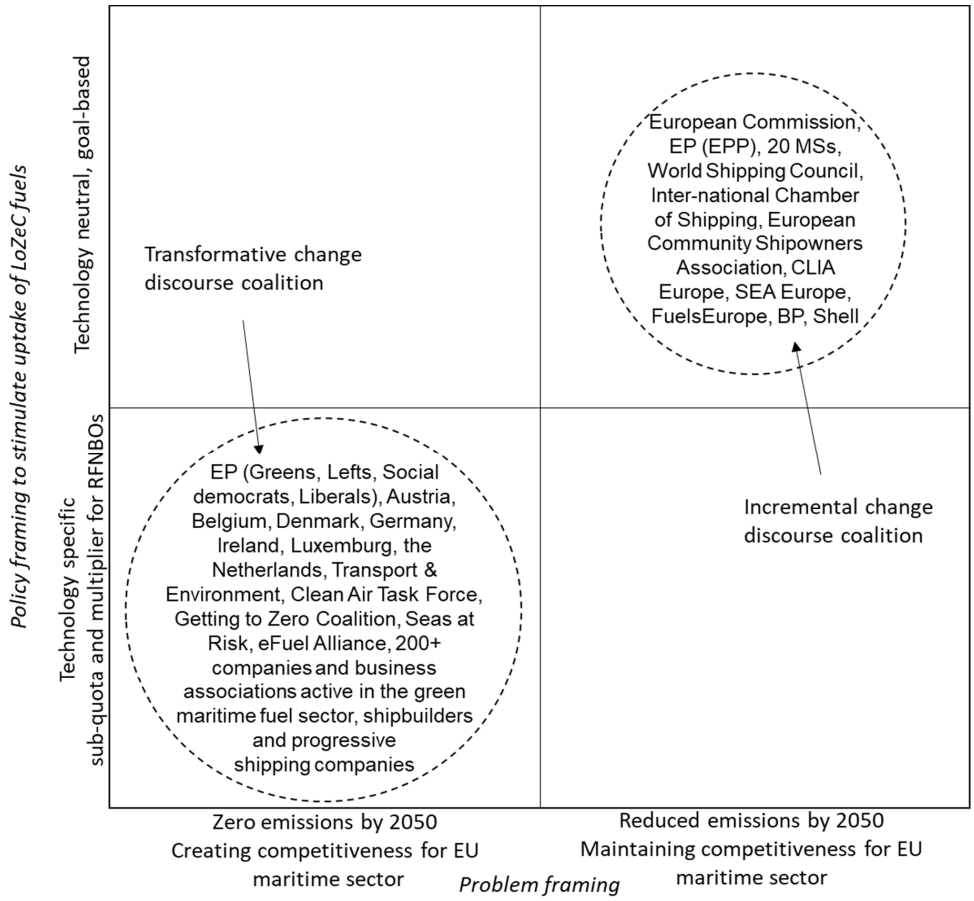

Figure 2. Discourse coalitions related to FuelEU Maritime.

The incremental change discourse was concerned with the economic impacts of high costs of alternatives to fossil fuels, especially RFNBOs, and the need for transition fuels, and thus aims at more moderate emission reductions. Cost-competitiveness of RFNBOs, which are considered the most effective way to decarbonize maritime shipping, is only expected beyond 2050 [9,136]. According to its storylines, high ambitions for emission reductions risk reducing the competitiveness of the EU maritime sector. To address these problems, storylines to frame policy focused on technological neutrality and the need for a goal-based approach where legislators do not pick "winning" technologies. These storylines were "invented" by the EC as a policy entrepreneur, under heavy influence of lobbying by international and European shipping associations, incumbent shipping companies and the fossil fuel industry [106]. The EC communicated its storylines in the proposal for the FEUM regulation [94,95]. In addition, it sought to gather support for its discursive framing by participating in conferences and stakeholder consultations in the 'European Sustainable Shipping Forum' and the 'European Ports Forum', as well as being present at the negotiations in the Council and in the trilogue negotiations. Here, the main purpose was to influence and answer questions from MSs, MEPs and other stakeholders, and to act as an "entrepreneurial gatekeeper; selecting, rejecting or reshaping the ideas that floated around in the 'policy primeval soup'" [137] (p. 140).

The transformative change discourse framed the problem as climate change as an emergency and thus a need for ambitious GHG emission reductions, banning fossil fuels and a need for the rapid scale-up of production and deployment of zero-carbon maritime fuels. The discursive framing of the policy to address these problems includes technology-specific policy with sub-quotas and a multiplier for the most advanced and effective zero-carbon fuels, i.e., RFNBOs. It was argued that this could help unlock massive investments and job opportunities in Europe and globally, and that it will increase competitiveness of the EU maritime sector as a frontrunner in the clean transition, becoming a leading global supplier of zero-emission shipping and fuel production technology, as well as gaining first mover advantage to the EU hydrogen economy. These storylines were "invented" by T&E as a policy entrepreneur, in collaboration with other ENGOs and progressive actors in the maritime value chain, as a response to the EC proposal on FEUM. Through careful construction of a broad coalition of allies [103], T&E found successful ways to leverage the knowledge and skills of other actors towards a common goal. Such a policy network is a repository of knowledge, knowhow, war stories and professional gossip, and can be a vital source of information for policy entrepreneurs [138].

Advocating a different framing than the EC, T&E and allies particularly wanted to influence the Council and its MSs as well as the EP and its party groups once the EC had presented its proposal. To communicate the storylines, argument and gather support for these alternative discursive framings, T&E and allies wrote reports, position papers and op-eds and participated in expert group meetings, conferences and targeted stakeholder consultations such as the *European Sustainable Shipping Forum* and the *European Ports Forum*. T&E and allies had no influence on the EC proposal, but were rather successful in their argumentation towards some MSs and party groups in the EP. Thus, the storylines of T&E were also told by progressive MSs and green-leftish party groups in the EP in negotiations in the Council and the EP.

Both discourses were legitimate, but neither of them was hegemonic, meaning neither was socially or culturally predominant in the policy debates on FEUM. Discursive hegemony is gained via discourse structuration and discourse institutionalization [52,81]. As mentioned in Section 2, discourse institutionalization can be reached by drawing on resources such as scientific and expert knowledge, political power and legitimacy, and the demonstration of new technology. In the case of FUEM, both discourses were coherent and credible, thus structured. In addition, both the EC and T&E had knowledge, statistics and technical–economic analysis as a basis for arguing for their problem framings and policy options. The concepts, elements and storylines articulated by both discourse coalitions were acted on in the policy process, but none of them replaced each other's understandings of the

issue, which is why they were not fully institutionalized. As analyzed by von Malmborg, the EC and T&E as policy entrepreneurs coupled their own strands of problems, policies and politics in their respective part of the policy domain, but they were not able to couple all streams entirely. In a sense, the two competing discourses were semi-hegemonic, cf. [48].

5.3. Discursive Agency to Reach Consensus

Discursive frames are cognitive–normative structures that constrain policy actors in their search for policies. They are also resources that can be harnessed in a strategic way in processes for policy change [54]. Discursive framing is thus a political process. As Baumgartner and Jones put it, "every interest, every group, every policy entrepreneur has a primary interest in establishing a monopoly—a monopoly on political understandings concerning the policy of interest, and an institutional arrangement that reinforces that understanding" [139] (p. 6). Here, monopoly can be understood as discursive hegemony. As a result, different discursive frames often compete.

Not all discursive frames work. They must make political sense, be legitimate and appeal to a large enough group of actors to garner wide support [140]. The most viable frames are usually those appealing to a hegemonic discourse with well-established interest, cognitive scripts, norms and identities [141]. For a discourse to shape politics over long periods, it must be embedded in an institutional framework consisting of stable organizational, procedural and normative structures [139,142,143]. The reshaping of the political space and the consistency between different discourses and discursive frameworks can only become universally accepted and lasting through discourse institutionalization [28,141].

As found, there were two competing discourses and discourse coalitions in the EU policy domain on decarbonizing maritime shipping: one including, among others, the EC and a majority of MSs and incumbents, and the other including, among others, T&E, other ENGOs, progressive companies and several party groups in the EP. With no truly hegemonic discourse, discursive agency on FEUM can be characterized as interdiscursive communication "navigating between different and conflicting discourses" [59] (p. 1938). Such navigation implies a relatively "deep-seated change and denotes the difficult movement between and exploitation of two or more distinct discourses to either counter or promote a particular policy goal" [59] (p. 1940). The aim is to mutate the competing discourses into one. In the case of FEUM, this means a mutated discourse that could frame a consensual agreement on the FEUM policy between the Council and the EP as co-legislators. Lynggaard and Triantafillou outline three specific strategies of agency for such navigation: (i) exclusion, (ii) multiple functionality and (iii) vagueness [59]. These are related to the different discursive interaction strategies proposed by Dewulf and Bouwen [58]. Table 4 outlines the interlinkages between the discursive interaction strategies and the strategies for discursive agency analyzed in this paper.

Table 4. Relationship between strategies for discursive agency and discursive interaction to deal with different and competing discourses. Based on [58,59].

Agency Strategy Interaction Strategy	Exclusion	Multiple Functionality	Vagueness
Polarization	√	–	–
Disconnection	√	–	–
Incorporation	–	√	–
Accommodation	–	√	–
Reconnection	–	√	√

The transformative change discourse evolved as a critical response to the incremental change discourse. The two discourses continued to evolve in dialectic conversation with each other. Arguments and the argumentation of one discourse were developed and refined in response to arguments and argumentation of the other discourse. Once mature, actors of the two discourse coalitions tried to influence members of the Council and the

EP as co-legislators to make them legitimate. These institutions molded the discourses and the discursive frames in intra-institutional negotiations that were then used to frame their respective negotiation mandates on FEUM [114,117]. The discourses were further molded in interinstitutional negotiations between the co-legislators, who eventually found a compromise (Figure 3).

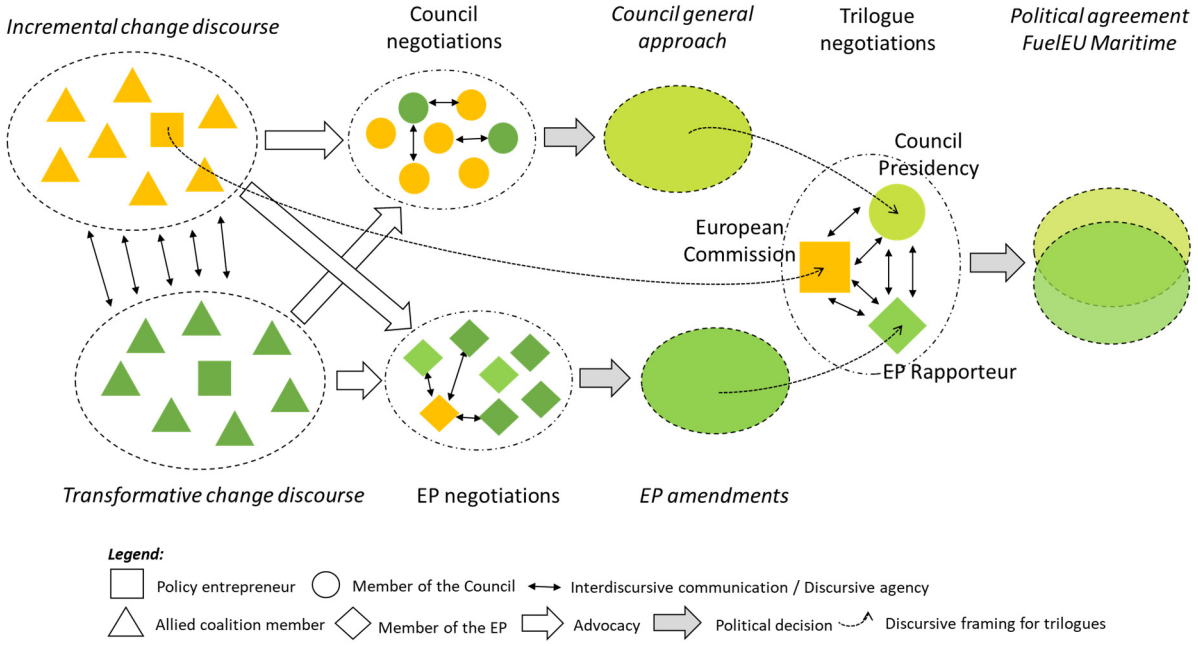

Figure 3. Discursive agency shaping the meaning of "decarbonizing maritime shipping" and framing the FuelEU Maritime regulation.

5.3.1. Exclusion Increases Polarization

The initial attempts to navigate between competing discourses were made by EC and T&E and their allies while trying to influence different stakeholders, particularly MSs in the Council and party groups in the EP when they were preparing negotiations on their mandates for the upcoming trilogues. The two discourses and related policy proposals were polarized. In dialectic conversations with the EC proposal, T&E and its allied interacted with the EC's storylines and discursive frames by "exclusion" as a discursive agency strategy, criticizing, polarizing and disconnecting the challenging elements from the ongoing conversation as irrelevant and unimportant, e.g., moderate emission reductions and technological neutrality implying that fossil LNG could still be used. T&E together with SaR argued that the Fit for 55 package related to shipping is not aligned with the Paris Agreement goal of limiting global heating to 1.5 degrees, nor the EU target on climate neutrality by 2050 [101]. Dr. Lucy Gilliam, senior shipping policy officer at SaR argued:

> "*The most insidious aspect of the proposals is that they will create a system that incentivises a shift from one fossil-fuel to another. In its current form, FuelEU Maritime will actually incentivise the use of fossil gas in form of LNG for shipping well into the 2040s*" [112] (unpaginated online article).

Responding to the critique of including LNG in FEUM, slowing down the production and deployment of zero-emission fuels and locking in fossil fuel reliance, the EC argued that a sudden switch to RFNBOs is unrealistic due to low supply. Joaquim Nunes de Almeida, director for energy-intensive industries and mobility with the EC's DG for Growth, said at a conference organized by *Euractive* in September 2021:

> "*We have to be aware of the constraints in which industry is operating right now, and right now the truth of the matter is that you still have very little renewables and hydrogen or decarbonised forms of energy available in Europe*" [98].

The EC and allies did the same with the T&E storylines. For instance, industry players, such as *CLIA Europe*, a cruise lines trade association, and *SEA Europe*, a group representing shipbuilders and maritime equipment manufacturers, criticized suggestions to make the use of RFNBOs mandatory, since the currently low supply makes these fuels extremely expensive [99,107,109]. They argued that a sub-quota on RFNBOs, as proposed by T&E, will raise costs for the shipping sector to meet the GHG target by 20–30%. In addition, WSC claims that an RFNBO sub-quota could lead to unnecessary complexity of the policy rather than provide long-term incentives for investments in LoZeC fuels, distracting focus from reducing GHG intensity to achieving interim quotas.

Analyzing the arguments, in addition to the argumentation, the EC falls into contradictory reasoning in the early stages of the process, claiming that the limited supply of RFNBOs makes them too expensive and thus that EU policy should not incentivize their deployment, but that incentivizing the production and deployment of RFNBOs could decrease the costs. Instead, ship operators could continue use fossil fuels, in the form of LNG instead of oil. It becomes evident that the EC is arguing for a proposal influenced by incumbents in the shipping sector and the oil and gas industry, which they do not themselves believe in. The head of unit in DG MOVE agreed but could not confirm this formally. The discursive agency of exclusion did not help to solve the differences between the discourses; rather, it increased the polarization. The Council and the EP adhered to different discourses and discourse coalitions, respectively.

5.3.2. Trilogues as a Venue for Reaching Consensus

The principal policy venues in policymaking on EU legislation are the negotiations in the Council, the EP and so-called trilogues, i.e., tripartite negotiations between the Council, the EP and the EC [144]. Informal trilogues have become an institutionalized standard operating procedure in the EU's ordinary legislative procedure since the entry into force of the Lisbon Treaty in December 2009 [145]. Under co-decision, trilogue negotiations can facilitate cooperation between the two co-legislators by creating "mutual confidence, and positive trust spirals" and by reinforce "skills at political compromise" [146] (p. 960). In trilogues, the institutions are represented by negotiating delegations tasked to facilitate and find a legislative compromise through political consensus between institutions. The main actors in the political navigation to reach consensus on FEUM, which took place in spring 2023, were the Council, or rather the rotating Council Presidency, represented by the transport attaché and the EU ambassador of the Swedish Presidency and their team, and the EP, represented by rapporteur Warborn, his team of political assistants and fellow MEPs from different party groups and committees. The Council and the EP represented each of the discourses and discourse coalitions—although somewhat revised (see Section 5.3.3). In addition, the EC, represented by a director, a head of unit, and policy officers from DG MOVE, took part to answer questions but also to be an "entrepreneurial gatekeeper". All institutions were also represented by their legal services.

Consensus between EU co-legislators can be reached in different ways. The mode of negotiation to be found in the EU is contextually determined [147]. Policy learning has resulted in changes in the EU's negotiation style, whereas problem-solving through deliberation is increasingly institutionalized [147]. Most negotiations are deliberative exercises where different policy actors try to reach consensual agreement through the force of the better argument. Convincing others of the right thing to do with good arguments, rather than bargaining via threats and promises, has become morally superior for negotiations in the EU [84,121,147,148]. Under certain circumstances, however, conflictual bargaining occurs. The pattern varies with levels of politicization and polarization, type of policy (e.g., legislation, Council conclusions, resolutions), policy domain (e.g., taxes, climate), and according to the stage in the decision-making process [147].

In the case of FEUM, the issues of emission reduction levels and technology-neutral goal-based vs. technology-specific policies and policy design options such as level of sub-quota and multiplier were highly politicized [49,50]. The high salience and level of politicization relates to FEUM, together with the inclusion of shipping in the EU ETS, the first being EU policy in a field that requires rather high emission reductions. Expectations were high for ambitious emission reduction targets and policies that could gain EU leadership in the clean energy transition, but incumbents required low impacts on competitiveness of EU shipping in a truly globalized sector, and competition between different sectors for LoZeC fuels. In addition, FEUM had the potential to be the world's most ambitious legislation for decarbonizing maritime shipping, with the EU having ambitions to be a global leader in climate governance [48]. In all, this resulted in trilogue negotiations of a bargaining rather than deliberative nature [49], stalling policy learning across coalitions [50].

5.3.3. Multiple Functionality Incorporates Elements of Competing Discourses

While discursive agency through "exclusion" led to increased polarization in the competing discourses, discursive agency of MS governments and politicians in the EP took the form of "multiple functionality". It involves "arguing that a policy embedded in a less-than-legitimate discourse must accommodate to a conflicting but legitimated discourse" [149] (p. 312). In this case, with two legitimate, semi-hegemonic discourses, bargaining and discursive agency between the Council and the EP as the legislative proponents of the two discourses resulted in both coalitions including elements from the other, competing discourse. There was a mutation in the discursive framing. This started in the intra-institutional negotiations leading to the Council and the EP adopting their negotiation mandates for the trilogues. With seven MSs in the Council opting for a sub-quota on RFNBOs, the Council agreed to include a multiplier of 2 for RFNBOs. In the EP, the rapporteur supported the initial EC proposal, but negotiations with S&D, Renew Europe, the Greens and the Lefts resulted in higher emission reductions, a multiplier of 2 and a sub-quota of 2% for RFNBOs. This was not identical to the proposal by T&E, but the sentiment and storylines of the transformative change discourse were intact. Both the Council and the EP negotiation mandates [114,117] accommodated elements of legitimate but conflicting discourses, cf. [59].

In the trilogues, "multiple functionality" was first used by the EC in dialectic conversation in an attempt to find consensus on the issue of allocating revenues from FuelEU penalties. Both the EC and EP argued in line with T&E and allies as well as the incumbent shipping industry that revenues should be allocated to an EU fund. In contrast, MSs argued that revenues should be allocated to MSs. The EC could accept allocation to MSs, on the condition that MSs report every five years how much money is spent on financing innovation projects for decarbonizing maritime shipping and who receives funding. The EP could accept this compromise proposal of the EC.

The main line of dispute between the two discourses was the emission reduction trajectories and the question of technology-neutral or technology-specific policy. The Swedish Council Presidency also utilized multiple functionality to find compromises between the competing discourses on these issues. Late in the trilogues, the Swedish Council Presidency suggested a "sunrise clause" on RFNBOs. The Council Presidency could accept the GHG target for 2050 proposed by the EP, but not as steep as for 2030–2045, and suggested that a sub-quota of 2% and increasing is to be introduced by 2034 instead of 2030, if the EC's analysis of RFNBO market development is not satisfactory. In its compromise proposal, the Swedish Council Presidency took both elements seriously and incorporated a reformulated version of a challenging element (high emission reductions) and reconnected frames by taking away the incompatibility between them (possible inclusion of sub-quota for RFNBOs in the future), cf. [58,59]. The different proposals on GHG emission reduction target discussed as well as the final agreement are presented in Figure 4.

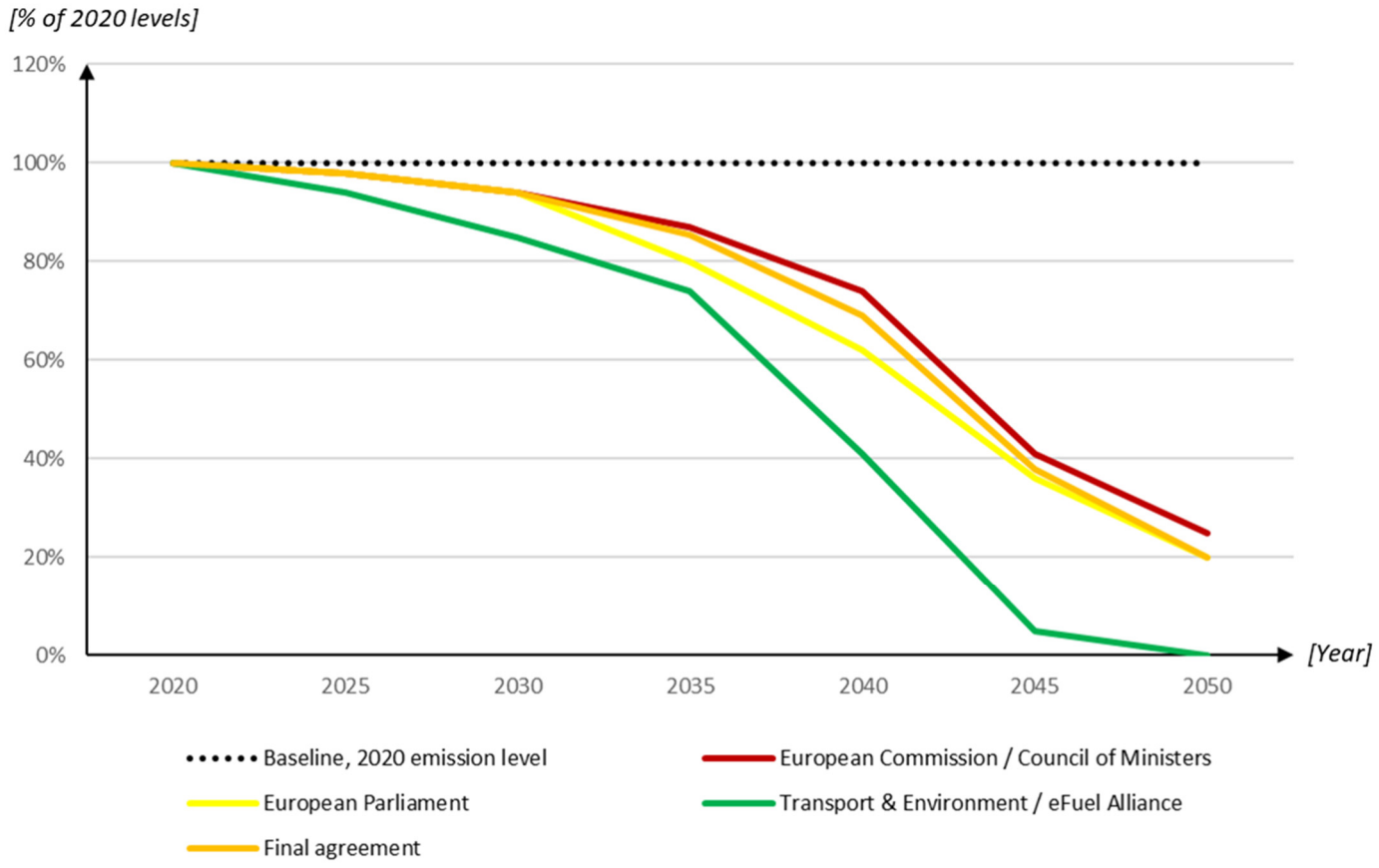

Figure 4. Target trajectories for GHG intensity reductions of different stakeholder, including the final target trajectory agreed [% of 2020 level]. Modified from von Malmborg [48,49].

5.3.4. The Ecological Modernization Discourse Provides Vagueness

Multiple functionality helped the co-legislators find consensus, but the original discourses were intact. As explained by von Malmborg, the bargaining mode of negotiations in the trilogues hampered policy-oriented learning across the two coalitions, leaving beliefs and basic understandings of problems and suitable policy solutions intact [50]. For a discourse to shape politics and policy over long time, it must be embedded in an institutional framework consisting of stable organizational, procedural and normative structures [139,142,143]. Discourses and discursive frames will be generally accepted and lasting if they are institutionalized [28,141]. The third discursive agency strategy proposed by Lynggaard and Triantafillou is vagueness, "which works by claiming that there is no contradiction between the discourses informing the policy at hand [. . .] involving propagation of a policy change by referring to discourse(s) in very general and vague terms, downplaying discursive conflicts" [59] (pp. 6–7). They suggest that the sustainability discourse offers such a case. Given that "decarbonizing maritime shipping", itself being part of the sustainability policy domain, includes several discourses, I argue that there is not one sustainability discourse but several sustainability discourses, pointing in different directions [150]. An overarching vague discourse must be more precise in framing problems and policy solutions, e.g., being related to a hegemonic political ideology like (neo)liberalism [150].

In the case of FUEM, such an overarching, blurring and vague discourse, incorporating the two competing discourses, is found in the hegemonic discourse on *ecological modernization* [52,142]. It is a political theory of social change and practical discourse on environmental policy presented as a means for capitalism to deal with the environmental challenge—that reformist environmental policy and growth go hand in hand [151,152]. As insightfully discussed by Haas et al. [153], EU energy and climate policy within the

EGD, to which FEUM belongs, is well rooted in the ecological modernization discourse, which focuses on market rationality, and the role of technology, efficiency and businesses in environmental policymaking, leaving out neo-Malthusian political ecology and ecological Marxist issues like "sufficiency" [41], "social justice" and "inclusion" [154,155]. The EGD is "a new growth strategy aimed at transforming the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there will be no net GHG emissions by 2050 and where economic growth is decoupled from resource use" [46] (p. 1). Ecological modernization has been the main discourse in EU environmental policy for a long time [63,142,156] and has been a strong discourse in global climate governance since the adoption of the Kyoto Protocol [75]. The EGD is the culmination of a long process of transforming EU climate policy, "from narrow, separate climate and energy policy initiatives to broader coordinated packages aimed at achieving increasingly ambitious climate targets" [157] (p. 26), thought to inspire innovation, new jobs and economic growth. But despite the commitment of high-level policy actors to urgent transformation, current policies still reflect an understanding of sustainability and climate change mitigation that is steeped in technoeconomic narratives of innovation and market rationalities, leaving out social justice perspectives in the EU as well as in other countries affected by EU policies [142,158]. And as claimed by Varoufakis and Adler, the EGD looks impressively holistic on paper, but "its capacity to transform Europeans' lives is circumscribed by the Commission's commitment to the austerian straitjacket of the 'stability and growth pact', which has condemned Europe to chronic stagnation" [159]. In short, the EGD is a plan for preservation, not transformation.

Both discourse coalitions on the decarbonization of shipping made use of economic arguments for their causes, focusing on green technology, innovation, markets, companies and competitiveness. The incremental change discourse referred to high capital expenditures, long commercial life of existing vessels and high costs of RFNBOs, thus that it would be more expensive to reach a given target if there is a sub-quota for RFNBO. It also saw a risk of technology lock-in and stranded assets. In addition, some actors mentioned the competition with other economic sectors for LoZeC fuel feedstocks, including road transport and aviation, which may increase fuel prices for shipping. The transformative change discourse argued for the need to stimulate swift innovation of advanced fuels that could create jobs and gain the EU first-mover advantage in the transition to climate neutrality and a green hydrogen economy.

However, both discourses left out important issues discussed in global climate governance such as "energy and climate justice" [160,161] and a "just, equitable and socially inclusive" energy and climate transition [29,162–165]. This is problematic. Due to the need for decarbonization, the cost of shipping will increase—about 7% in the EU (most of which is due to increased fuel costs) according to the EC's impact assessment [95]. But costs for shipowners from third countries are expected to increase by 17.8% by 2050—more than double the increase in the EU [95]. As argued by Shaw and De Beukelaer, "shipping decarbonization would likely make raising living standards for the world's poorest difficult, costing development opportunities, as already limited resources would be consumed by higher shipping costs" [166] (unpaginated online article). In comparison, the issues of a "just, equitable and inclusive" transition are discussed at the IMO as part of the discussions on policy measures like MBMs to reach the new climate target on climate neutrality by around mid-century. There also was no discussion on reducing demand for maritime transport services in the EU, cf. [39,40]. Oels claims that a neoliberal governmentality of ecological modernization limits climate policy to focus on efficiency, which will not be sufficient to prevent global warming [74].

Crespy and Munta [167] as well as Dupont et al., argue that "policies and tools associated with the just transition inside the EU do not lead to a just transition that adequately addresses environmental and social problems" [90] (p. 7). The setup and institutional design of EU institutions hamper their implementation of a just transition [168]. EU institutions have limited ability to overcome the institutional factors that hamper implementation

of a just transition, particularly in policy domains where the EU holds limited legal competence according to TFEU, such as social policy [168,169]. In the EGD, the just transition is primarily seen as a financial transfer policy through the *Just Transition Mechanism* and the *Social Climate Fund* with targeted financial support to affected regions [170].

Both discourses on decarbonizing maritime shipping fit well in the overarching discourse of ecological modernization. But as argued by Bressand and Ekins, the second-generation energy transition that is required for decarbonization, producing fuels from power, requires transformation of social organization involved at an order of magnitude greater than it was for the first-generation transformation focusing on renewable electricity, producing power from fuels [28]. This seems not to have reached the minds of EU policy actors in the policy domain on decarbonizing maritime shipping. Evidently, the heritage of the ecological modernization discourse creates path dependency and lock-ins [171] for a broader discourse on decarbonization needed for a just transition to reach climate neutrality.

6. Discussion and Conclusions—The Meaning of Decarbonizing Maritime Shipping

This paper has critically analyzed the politics related to FEUM as a policy for decarbonizing maritime shipping. Applying argumentative discourse analysis based on interviews and qualitative text analysis, the paper analyzed the storylines and discourses as well as discursive agency of different policy actors in making meaning of the concept of *decarbonizing maritime shipping*. Thus, it adds new perspectives and knowledge of the policy process and politics of FEUM over what is provided by previous research, using other theories of the policy process [48–50].

Two discourses and discourse coalitions with different sets of storylines evolving in dialectic conversations were identified. The first, *incremental change discourse*, was led by the EC, influenced by the incumbent shipping and fossil-fuel industries, and supported by most MSs in the Council and the EPP party group in the EP. The second, *transformative change discourse*, was developed in response to the first and led by T&E. It was supported by ENGOs, producers of RFNBOs, progressive shipping companies, green, liberal and social democrat politicians in the EP, and seven MSs in the Council. Unlike advocacy coalitions, which are based on collaboration of actors with shared beliefs, "discourse coalitions are not necessarily based on shared interests and goals, but rather on shared terms and concepts through which meaning is assigned to social and physical processes and the nature of the policy problem under consideration is constructed" [80] (p. 247). Comparing the results of this paper with results of von Malmborg's study of advocacy coalitions in the policy process of FEUM [49], it is found that the two discourse coalitions mirror the two advocacy coalitions. Actors within each set of coalition thus shared beliefs and terms and concepts, and they did collaborate, but this is not always the case.

This paper shows that competing storylines on the urgency of climate action, economic interests and stimulation of innovation of the two discourse coalitions shaped the discourses and discursive framing of the policy discussed by the co-legislators. The concept of competitiveness was important in the conversations. It was used in both discourses, but with different meanings. The transformative change discourse related competitiveness to new opportunities for European industry leadership gained from the clean transition, while the incremental change discourse related competitiveness to maintaining current shares of the global shipping market, which could be threatened by the clean transition due to higher fuel costs. The crisis-oriented and risk-averse incumbent shipping and fossil fuel industries wanted to slow down the clean energy transition since profits of LoZeC fuels compared to fossil fuels are too low for the fossil fuel industry to invest in such production, cf. [25,35,172]. The economic risks of RFNBOs are considered too high. While increased uptake of transformative technologies such as RFNBOs can bring capital costs down, perceived technical risk can further increase such cost. The interests of incumbent players represent a huge political challenge for the decarbonization of shipping, cf. [23]. This also confirms results from studies of climate governance and the clean energy transition in general [27,28]. On the contrary, ENGOs, green and leftish parties, and process-oriented and proactive companies

in the maritime value chain called for a first-mover advantage in the "green energy race" to a hydrogen economy from strict rules on RFNBOs, cf. [35,173]. Incumbents managed to influence the EC as agenda-setter, proposing more moderate emission reductions and a technology-neutral, goal-based approach with no special treatment of the more innovative but also more expensive RFNBOs. The latter coalition managed to influence the EP and the Council to call for special treatment of RFNBOs.

As for environmental concerns, there was a debate on moderate or 100% emission reductions by 2050, the latter given the EU target of climate neutrality. At the end of the day, the co-legislators agreed on legislation with higher ambitions for GHG intensity reductions than proposed by the EC, but not to 100% by 2050, and they introduced a multiplier and potentially a sub-quota to stimulate innovation of RFNBOs. In addition, the EC proposed to ban biofuels based on food and feed crops because of ambiguities about their decarbonization potential and sustainability, a proposal welcomed by T&E and allies but criticized only by countries with high production of such biofuels.

However, policy actors in both discourse coalitions failed to include issues of social and climate justice, in the EU and globally, making "decarbonizing maritime shipping" "just a transition rather than an opportunity which creates a just transition" [174] (p. 1).

This paper shows how (argumentative) discourse analysis in combination with analysis of discursive agency can trace how the meaning of the concept of "decarbonizing maritime shipping'" (Table 5) evolved in dialectic conversations of policy actors navigating between different and competing discourse coalitions. This politics of meaning, applied to FEUM, shows how politics is conducted, with different policy actors actively positioning themselves in such a context, cf. [52]. In the case of FEUM, the elements of both discourses molded through discursive agency of exclusion and multiple functionality into a political compromise. A political compromise was also facilitated by vagueness and blurring of the two competing discourses, which, it is argued, both belong to the overarching discourse of ecological modernization with a focus on economics, markets and technology, cf. [142]. Exclusion was used early in the process, when T&E and the EC competed to gain support for their storylines in the Council and the EP, but did not help resolve the differences, rather increasing the polarization. Multiple functionality was successfully used in negotiations in the Council, the EP and at the very end of the policy process, in the final trilogue meeting, when the competing coalitions had to find consensus on a compromise. The finding of this temporal aspect of when in the process different discursive agency strategies are used adds to the work of Lynggaard and Triantafillou, cf. [59].

Table 5. Meaning of "decarbonizing maritime shipping".

Discourse	Decarbonization of Maritime Shipping
Incremental change discourse	Transition to climate neutrality is a threat to the growth and competition of the European maritime industry. Since LoZeC fuels are costly, transitional fuels must be allowed, and emission reductions in the sector should be moderate, reaching −90% by 2050. This target should be met by technology-neutral policy.
Transformative change discourse	Transition to climate neutrality is an opportunity for increasing competitiveness of the European maritime sector. Since LoZeC fuels are costly, massive innovation is needed and fossil fuels must be banned. Since climate change is an emergency, emissions must be reduced to 0% by 2050 at the latest. This target should be met by technology-specific policy.
Ecological modernization discourse	Transition to climate neutrality is an opportunity for increasing the competitiveness of the European maritime sector. Since LoZeC fuels are costly, massive innovation is needed but transitional fuels must be allowed, and emission reductions in the sector should be moderate, reaching −90% by 2050. This target should be met by a combination of technology-neutral and technology-specific policy.

Discourse analysts have generally been reluctant to provide strategic policy advice. Criticizing this reluctance, Lynggaard and Triantafillou extended the scope of discourse analysis to include discursive agency in an attempt to utilize discourse analysis with the

tools to include advice that may change or modify how discourses are utilized in shaping policy [59]. I try to bring on this attempt. As for policy advice from this study, the analysis of discursive agency and interaction strategies provides important knowledge to policy actors on how competing storylines and discourses can be dealt with in the policy process. As shown, political influence partly depends on the ability of policy actors to navigate between different and competing discourses. In addition, the two competing discourses are both associated with the overarching ecological modernization discourse and failed to include issue of climate justice and a just transition. The heritage of the ecological modernization discourse creates lock-ins for a broader decarbonization discourse, thus stalling a just transition. In this sense, and by focusing upon the linguistic strategies and argumentation that actors mobilize in dialogue over decision-making on FEUM, the analysis draws out the embedded contextual factors in which policy options emerge. This may have negative impacts on EU's possibility to serve as an "exemplary leader" in discussions in the IMO on global policies for decarbonizing maritime shipping, in which just transition is central, cf. [48].

As mentioned, this paper adds to previous research on policy processes on decarbonizing maritime shipping in IMO and the EU. Most studies have analyzed the roles and strategies of influential actors in the policy processes, e.g., the EU and the Marshall Islands in the IMO [42,47,175] and the EC and T&E in the EU [48,49]. As for advocacy coalitions and co-legislators to reach consensus on FEUM, von Malmborg analyzed the negotiations between the Council of the EU and the EP, finding that they were of a bargaining mode [49]. This hampered policy-oriented learning across the two coalitions [50]. This study, analyzing the use of language and discursive agency to deal with the different and competing terms and concepts, manages to identify and explain more specifically how and why the co-legislators managed to reach consensus on FEUM. This is a strength of ADA compared to ACF and MSF, the latter which omits the analysis of language use and meaning-making. This paper confirms the previous finding that ENGOs can gather support to stand the grounds against heavy lobbying by incumbents in the oil and gas industry by building large, like-minded coalitions, cf. [48], but adds that it is at large a consequence of the language, the terms and the concepts used.

In all, this paper is based on a case study from which some generalizable conclusions have been drawn, e.g., that different discursive agency strategies are used at different times in the policy process, and that embeddedness of discourses in more overarching discourses like ecological modernization may lead to path dependency and lock-ins that hamper broader discussions on decarbonization needed for a just transition to reach climate neutrality. To better understand FEUM as a policy instrument and how it affects GHG emissions from maritime shipping, studies are needed on the implementation of FEUM in MSs. To better understand policies for decarbonization in the EU, discourse analyses could be carried out on policy processes related to other legislative acts of the EGD and the Fit for 55 package. Is the lack of "climate justice" in the political discussions a case only for FEUM, or is it the case also in other pieces of legislation related to Fit for 55? Despite the co-legislators of the EU finding a mutated, second-best version of the two discourses, belonging to the ecological modernization discourse, giving a slightly new meaning to the concept of "decarbonizing maritime shipping", the meaning never settles but will continue to be the object of sociopolitical contestation. Green parties, ENGOs and progressive MSs and companies discontent with the legislation will continue to strive for "true" carbon neutrality, e.g., in the run-up to the review of FEUM and EU ETS shipping at the end of 2027. Future research should analyze potential discourse transformation, whereby existing discourses are dislocated and transformed into a new discourse that would frame policies for a just transition of the maritime shipping sector. In addition, discourse analysis could also render more knowledge of the politics related to the MBMs for decarbonizing maritime shipping currently developed and debated in the IMO. Which are the discourses? How do the EU and its MSs argue, and how do the shipping industry and states in the Global

South argue on the transition of a truly global sector? How do actors navigate between competing discourses? Will the mutated discourse frame a just transition?

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