HOW CLIMATE POLICIES IMPACT DEVELOPING COUNTRIES: THE CASE OF THE EUROPEAN UNION CARBON BORDER ADJUSTMENT MECHANISM

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Abstract

Climate policies, the measures taken to combat climate change, may impact countries disproportionally depending on their capabilities to design, implement and execute them. Whereas developed countries are more capable, adaptive, and prepared for the climate transition, developing countries may face greater economic, environmental, and social obstacles. To prevent any further unintentional hardship to the less resilient, existing strategies tackling climate change, such as carbon pricing, must be established with consideration to the principles of justice. One of the key carbon pricing initiatives includes the European Union Carbon Border Adjustment Mechanism (CBAM), which creates a historically first carbon border tariff. The thesis seeks to evaluate the potential impact of the CBAM on the most exposed developing countries exporting to the EU. For the purposes of the thesis, I used the multi-method approach, including desk research, textual analysis of the CBAM Regulation, participant observation at the European Climate Summit and expert qualitative interviews with EU policymakers. By thorough analysis, the study contributes to the international relations discourse and proposes solutions to mitigate the negative repercussions of climate transition to developing countries. My findings suggest that the revenue of CBAM should be allocated to support climate action in those countries and, thus, partially offset the unequal impacts of this Mechanism, creating a truly "just and inclusive transition for all".

Keywords: *Carbon Border Adjustment Mechanism, Carbon Pricing, Climate Justice, Revenue Recycling, European Union, Developing Countries, International Climate Action*

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BCA	Border Carbon Adjustment
CBDR	Common But Differentiated Responsibilities
ECS	European Climate Summit
EGD	European Green Deal
EITE	Emissions-intensive-trade-exposed
ETS	Emissions Trading Scheme
EEA	European Economic Area
EU	European Union
GDP	Gross domestic product
GHG	Greenhouse gas
LDC	Least developed country
MRV	Monitoring, reporting and verification
NDICI	Neighbourhood, Development, and International Cooperation Instrument
ODA	Official development aid
OECD	Organization for Economic Cooperation and Development
TAR	Third Assessment Report
UN	United Nations
WB	World Bank
WTO	World Trade Organisation

Introduction

With the goal of making Europe the first carbon-neutral continent in history, the European Green Deal (EGD) set the European Union (EU) on an ambitious course toward climate neutrality. This commitment is legally underpinned by the European Climate Law, which incorporates into the law of Member States the goal set out in the EGD for Europe's economy and society to become climate-neutral by 2050 as well as to fulfil the intermediate target of reducing greenhouse gas (GHG) emissions by at least 55 % by 2030, compared to 1990 levels. As a response, a set of proposals in the form of the "Fit for 55" package, initiated by the European Commission. This detailed roadmap, designed to reach the stated goals and cover every major sector of the economy, was reviewed and later approved in collaboration with the European Parliament and the Council of the EU (European Commission 2021b).

In this context, this thesis explores the implications and functioning of one of the key EU climate policies, the Carbon Border Adjustment Mechanism (CBAM). Commonly referred to as a "European carbon tax", CBAM is the first carbon border tariff in history (Carbon Brief 2023; European Commission 2024), distinguished by "its innovativeness and significance" (Verde and Borghesi 2022). As one of the central components of delivering the EGD and a part of the "Fit for 55" package, it aims to align international trade with the EU's climate goals by incentivizing emissions reduction both within and outside the EU[1]. More specifically, the purpose of CBAM is to lessen or stop carbon leakage, defined as the phenomenon that occurs when companies relocate their production to countries with less stringent emission standards, leading to an increase in total emissions and a scale-down of efforts (European Commission 2024a; European Commission 2024b). Gaining recognition as a revolutionary climate change

[1] CBAM will apply outside the CBAM territory - everywhere except the EU Member States, Iceland, Norway, Liechtenstein and Switzerland, as well as several small territories/exclaves such as Büsingen, Heligoland, Livigno, Ceuta, Melilla (PwC 2022).

mitigation[2] policy instrument, CBAM prices carbon on the highest carbon-intensive[3] imported goods entering the EU (cement, iron and steel, aluminium, fertilisers, electricity, and hydrogen). The measure will operate through a system of certificates[4] that reflect the carbon emissions from CBAM-covered goods. The emissions that are associated with the goods will be reported by the EU importers which must register with their home countries' authorities to obtain these certificates. To avoid double payment[5], importers will be deducted an amount from their CBAM obligations if they can prove that a carbon tax was already paid in the country of production due to the national carbon pricing mechanism, i.e., by the manufacturing of the goods (EUR-Lex 2023).

Officially coming into effect on May 17, 2023, CBAM's transition "learning" phase runs from October 1, 2023, to December 31, 2025, with the complete rollout anticipated for January 1, 2026. CBAM financial adjustment (the cost of the certificate) will have to be paid by EU importers only after the transition phase at the beginning of 2026. Additionally, by the end of this period, the European Commission will carry out a thorough assessment of the CBAM's implementation. In compliance with Article 30(2) of the CBAM Regulation, this review will assess, among other things, the viability of expanding CBAM to additional products and industries. Such an enlarged scope is predicted as the EU aims to extend its reach to a broader range of other carbon-intensive imports (EUR-Lex 2023; European Commission 2024a). Any intended expansion of the CBAM's purview would need the European

[2] Responding to climate change involves two principal approaches: 1) Climate change mitigation, which aims to reduce GHG emissions and improve their absorption to stabilize atmospheric levels and avoid severe disruptions; 2) Climate change adaptation, which aims to foresee the adverse effects of climate change and take appropriate action to prevent/minimise the potential damage, and seize any emerging opportunities associated with the climate transition (NASA 2024).

[3] Carbon intensity can be defined as the volume of CO2 released per unit of energy used in production, or as the ratio of CO2 to energy (WB 2024a).

[4] CBAM certificates will be priced based on the weekly average auction price of the EU Emissions Trading Scheme allowances, which is stated in EUR per tonne of CO2 emissions (European Commission 2024a).

[5] A scenario in which a producer may be subject to two different carbon pricing regimes, potentially in violation of international trade regulations under the WTO.

Commission's legislative proposal to amend the CBAM Regulation, followed by approval by the European Parliament and the Council of the EU.

As CBAM will expand in its scope, its importance and impact in shaping international climate policy will grow correspondingly. The initiative is gradually poised to complement existing EU mechanisms governing emissions, including the current EU Emissions Trading Scheme (EU ETS) and the related distribution of free allowances of the EU ETS certificates. Employing a market-based approach[6], EU ETS is the oldest and largest carbon market[7] globally, covering emissions from industry, power generation, domestic aviation, and maritime transport. In comparison to CBAM, EU ETS functions only in the EU Member States, in the states of the European Economic Area (EEA) and Switzerland[8], and operates under the cap-and-trade model, wherein the total amount of GHG emissions permitted by the applicable system operators and installs is capped and can be traded through allowances. The number of EU ETS free allowances allotted to installations is determined by benchmark values, and in contrast to CBAM, only a certain quantity of certificates is available for purchase. In keeping with the EU's climate aims, this cap is annually lowered to guarantee a steady decline in emissions (European Commission 2024c). The CBAM phase-in plan will continue with the phase-out of the EU ETS allowances free allocation for EU-covered sectors, spreading this process over nine years, from 2026 to 2034. The EU ETS free allocation is set to be phased out gradually toward the latter part of this period, with a complete end by 2035. Estimates indicate that CBAM, once fully implemented, will cover more than half of the emissions from industries included in EU ETS (Verde and Borghesi 2022; ICAP 2023; ICAP 2024).

[6] A market-based approach uses economic incentives to reduce GHG emissions. The most common example is the EU ETS (UNFCCC 2024b).

[7] Carbon markets are trading systems where carbon credits, representing a certain amount of emitted CO2/equivalent, are bought and sold, enabling companies or individuals to offset their emissions by acquiring credits from entities that reduce or remove GHG emissions (UNDP 2022).

[8] Countries of EEA and Switzerland are excluded from CBAM since they have an ETS that is connected to the EU ETS, or they are directly involved in it (European Commission 2024a).

This thesis acknowledges CBAM's numerous challenges, such as its impact on exporting countries, monitoring, reporting, and verification (MRV) issues, World Trade Organisation (WTO) compatibility, the possibility of unintended carbon leakage, a potential rise in consumer prices, competitiveness concerns, etc. (Reichert and Menner 2021; Markkaken et al. 2021; Dröge 2021; Benson et al. 2023; Chepeliev, et al. 2023; Maliszewska et al. 2023; Pleeck and Mitchell 2023; Dillon et al. 2024; Svensson 2024). The objectives of the study are to observe how the EU meets its climate objectives and simultaneously suggest ways of reducing associated negative impacts, such as the unequal distribution of socio-economic costs. The guiding question is: "How can the EU minimize the harm to third countries[9], particularly the developing ones while contributing to climate change mitigation through the implementation of CBAM?". To address this question, the study presents two sub-questions: "How does CBAM align with the EU's goal of a “just and inclusive transition for all" – on paper and in practice?", and "What measures can the EU take to mitigate any adverse effects on the most vulnerable exporters among developing and least-developed countries (LDCs) without compromising its climate objectives?". The research does not argue against CBAM but rather offers a new analysis informed by relevant studies and insider perspectives, recognizing the policy's importance while exploring its broader implications.

Whereas combating climate change is essential, the study suggests implementing climate policies should drive a just and equitable energy transition aiming to minimize negative impacts on global justice while leveraging their benefit. Over the decades, the field of international relations focusing on environmental issues has significantly expanded. Scholars have identified numerous critical factors that determine related policies, such as scientific consensus, states' bargaining power alongside material self-interest, the role of corporate non-

[9] The expression "third country" refers to a country or territory that is not part of the Union's customs territory (EUR-Lex 2023). In the case of CBAM, under the "third country" category fall all countries outside the EU with the exception of Switzerland and the states of EEA.

state actors and non-governmental organizations, transnational networks, political leadership, external shocks, and many others. Despite these scholarly advancements, the significance of climate justice in influencing international environmental politics has been largely overlooked. Furthermore, social science research related to these matters has had minimal impact on energy policy, even though it is widely acknowledged that the transition towards cleaner energy and efforts to address environmental issues will create both winners and losers (Roberts and Parks 2006; Miller et al. 2015).

Given the gap in international relations research concerning the role of climate justice in shaping climate policies, this study uses an example of CBAM in a quest to enrich the broader dialogue on harmonizing climate action with principles and frameworks of justice, guaranteeing the costs and benefits of climate policies are distributed fairly on a global scale. This gap, present in both academia and policy, is particularly significant in the case of carbon pricing. Economic globalization has made many developing countries in the stage of industrialization reliant on carbon-intensive exports, such as minerals, oil, and manufactured goods, making it challenging to diversify their economies (Roberts and Parks 2006; Newell and Paterson 2012; Wood et al. 2020; Sultana et al. 2023). To minimize the negative impact on these nations, it is essential to design relevant carbon pricing policies with compensatory mechanisms to support affected industries and regions.

The thesis argues that revenue recycling, where a share of the resources generated by CBAM could be redirected to support climate mitigation and adaptation in the relevant countries, can be the balanced solution promoting a more just and equitable energy transition. Although this proposed solution was not incorporated into the CBAM final agreement (Benson et al. 2023), it is discussed and thoroughly explored in the analysis. Ultimately, this research goes beyond summarising literature and policy outcomes thanks to the research methods of

interview and participant observation and its theoretical framework with a fresh focus towards climate justice. As a result, the study contributes meaningfully to the broader field of international relations by providing constructive suggestions for integrating revenue recycling into carbon pricing mechanisms, such as CBAM.

Chapter 1 – Literature Review and Theory

1.1. Carbon Pricing Mechanisms as a Means of Climate Change Mitigation

Governments everywhere are compelled by the imminent threat of climate catastrophe, setting ambitious climate objectives, and implementing efficient policy solutions. As per the findings of the Intergovernmental Panel on Climate Change (IPCC), the United Nations (UN) authority in charge of analysing climate science, carbon dioxide[10] (CO2) is the principal factor contributing to climate change. However, it has been proved that substantial decreases in CO2 and other GHG emissions can impede the acceleration of climate change. To keep global warming to 1.5 degrees Celsius, there must be a worldwide reduction in carbon emissions from both the production and consumption of energy (Perlaviciute et al. 2021; IPCC 2022; IPCC 2023). Carbon pricing initiatives, namely ETS, carbon taxes and emission reduction funds, are policy tools quantifying the external expenses associated with carbon emissions that could be used to achieve these reductions. In fact, it is acknowledged that the most flexible and effective strategy to reduce emissions and drive energy transition is to put a price on carbon (OECD 2013; UNFCCC 2024a; S&P Global Commodity Insights 2024).

In the context of urgent climate change, proponents for carbon pricing mechanisms are progressively gaining prominence both in academia but also in economic, political, and environmental policy circles as a potential solution, and carbon pricing has demonstrated factual reductions in GHG emissions (IPCC 2022). Currently, there are 74 operational carbon pricing mechanisms, comprising 37 carbon taxes and 37 ETS. Several jurisdictions intend to broaden the scope of existing mechanisms or institute new ones, all indicative of a growing

[10] Despite the fact that other GHG emissions (methane – CH4, nitrous oxide – N2O, fluorinated gases and CO2 emissions from industrial processes) can represent a significant share of total emissions in certain countries, they are the least covered by carbon pricing measures (OECD 2013).

global commitment to address climate change through market-based approaches. Based on the most comprehensive annual study on carbon pricing, the World Bank (WB) State and Trends of Carbon Pricing 2023 Report, carbon pricing covered 23 % of global emissions – ETS accounting for 18 % and carbon tax for 5 %. The report also highlights the need for carbon pricing to increase in scope and expenditure to spur the changes required to meet the temperature targets outlined in the Paris Agreement – the strongest international legally binding treaty towards climate action. Accordingly, carbon pricing should be a fundamental element to help nations reach "net zero" climate targets in the next thirty years (WB 2023).

While not a recent innovation, the idea of carbon taxation can be traced back to the early 1920s with the introduction of the "Pigouvian tax". Through the use of taxes, English economist Arthur Cecil Pigou sought to address a variety of negative externalities and market failures (Pigou 1920). Beginning the practical implementation of carbon taxes, the governments of Finland and other Nordic nations were the first to tax CO2 emissions from fossil fuels in the 1990s as a part of their efforts to promote environmental awareness and sustainability. William Nordhaus, the Nobel laureate, advanced the idea further by significantly contributing to the carbon pricing literature and refining the notion of carbon taxes. Additionally, he was among the first to assert that carbon pricing schemes are one of the most effective ways to tackle climate change (Nordhaus 1979).

David Pearce furthermore officially introduced the concept of "the double dividend" of carbon pricing, which is the idea that by using the revenue they generate, such taxes may reduce both the pollution (the first dividend) and the total expenses of the tax system (the second dividend) (Pearce 1991; EEA 2024). Another Nobel laureate, Thomas Schelling, also wrote extensively about climate change policy solutions and conducted a cost-benefit analysis of implementing carbon taxes (Schelling 1992; Schelling 2002). Other proponents of carbon

taxes, such as Jorgenson, are also regarded as visionaries in the research of carbon taxes; nevertheless, they critically examine the idea and provide a few requirements to guarantee their carefully constructed, operational, and successful execution (Jorgenson et al. 1992). Moreover, when Nicholas Stern asserted in his well-known Review on the Economics of Climate Change that inaction on climate change would have far more dire consequences than action, he also concluded that one of the action instruments used should be a carbon tax, specifying conditions for its effectiveness (Stern 2006).

Furthermore, Metcalf and Weisbach expanded the design of carbon taxes, emphasising the need to mitigate distributional impacts and strategically use generated revenue, whereas Bovenberg and Goulder emphasised the importance of international cooperation in creating a carbon tax system that is effective worldwide (Bovenberg and Goulder 2001; Metcalf and Weisbach 2009). In terms of a sort of "international carbon tax", Aaron Cosbey (2008) is among the first ones who pay close attention to border carbon adjustments (BCAs) and their effective design. The author puts forward a summary of key issues, including those related to competitiveness, carbon leakage, WTO legality, data unavailability, and domestic concerns in developing countries. Still, he suggests feasible pathways as a way forward by setting the necessary conditions for effective BCAs (Cosbey 2008).

1.2. Addressing Climate Change from a Justice-Centered Approach

Taking advantage of the positive effects of climate change mitigation policies while diminishing the negative ones requires identifying and acknowledging the socioeconomic inequality impacts that these policies may have and the channels via which these impacts can occur (Markkanen and Anger-Kraavi 2019). Adopting a justice-focused approach is crucial for addressing climate change, as its repercussions worldwide are dispersed unevenly. While certain areas are more resilient and equipped towards the climate transition, others, often

developing countries, experience greater economic, environmental, and social challenges in this process (Miller et al. 2015). Still, as already indicated in the Introduction, theories on this issue often fall short of explaining how inequality matters in climate policy outcomes, and even well-regarded assessments fail to recognize the importance of a range of impacts – especially the ones that are difficult to quantify in monetary values (Roberts and Parks 2006; Page 2006).

According to established definitions from the Oxford Dictionary and Cambridge Dictionary, climate justice means that efforts to combat climate change also address social justice issues. This encompasses recognizing that wealthier countries, which are primarily accountable for GHG emissions causing climate change, must take responsibility for its effects and support developing countries and poorer communities, which have contributed least to the problem but are disproportionately impacted by climate change (Oxford University Press 2023; Cambridge University Press & Assessment 2024). Current mitigation strategies, such as carbon pricing, are key to combating climate change but must be designed with justice principles in mind, as these mechanisms can unintentionally place greater burdens on those with fewer resources. Thus, a justice-centred approach promises climate policies to account for created disparities, encouraging equitable solutions supporting all countries in their respective transition pathways.

In this context, it is crucial to define the range and nature of responsibilities related to mitigating climate change, raising two fundamental concerns. The first is the Climate Action question: "Who should engage in implementing mitigation and adaptation measures, and to what extent?". Additionally, as the adaptation and mitigation often carry various types of cost (e.g., a carbon tax on goods could lead to higher prices), the other is Burden-Sharing: "Who should bear the financial and other costs associated with these efforts?" (Caney 2021). Firstly, to answer the Climate Action question, the "contribution to the problem" argument claiming

that developed countries are responsible for the majority of the GHG emissions in the present atmosphere is strong and the data supporting the argument is literally undeniable (Cooper and Bruce 1997; Page 2006). Secondly, focusing on the latter question, the Burden-Sharing argument contains three main concepts, each differing in terms of who should bear the burden. The Polluter-Pays-Principle suggests that those responsible for causing the issue should pay the costs; the Beneficiary-Pays-Principle holds accountable those who benefit from activities causing climate change; and the Ability-to-Pay-Principle argues that the obligation should be placed on those with financial means to carry it (Caney 2014; Le Merle 2022; Dolšak and Prakash 2022).

Despite their importance, the various approaches face various challenges, such as accurately attributing emission responsibilities, ensuring accountability of emitters, or risking discouraging participation from affected countries if these strategies appear to benefit primarily those with more resources (Page 2006; de Sadeleer 2020; Gaur et al. 2022). There is a notion that each principle carries intrinsic value that cannot be weighed, requiring a burden-differentiation approach aligning all principles and applying them distinctly to specific scenarios (Page 2011). Ultimately, in assigning the "burden", all arguments carry the important distributive justice element but in a different way. Distributive justice involves determining our responsibilities to one another, ensuring that not only burdens but also created benefits are distributed fairly. As will be seen in Chapter 3, any principle providing moral guidance on allocating both burdens and benefits, regardless of the terminology used, can be considered a principle of distributive justice (Lamont and Favor 2017; Mintz-Woo 2024).

Though there are variations throughout the current versions of the Green New Deal, "just transition" is identified as being fundamental in all of them (Zografos 2022). Already in the 1990s, the Third Assessment Report (TAR) of the IPCC emphasised that the distributional

effects of climate change pose a serious issue for equity and equality on both a national and global scale. The TAR also underscored that any successful approach to addressing climate change must align with principles of ethics, equity, and justice. Policymakers, scientists, and ethicists widely embrace this premise, notwithstanding occasional disagreements (IPCC 2001; Page 2006). The 1992 UNFCCC, in particular Article 3.1, marked the first significant incorporation of this emphasis on these considerations into international agreements:

> Acknowledging that the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities (CBDR) and respective capabilities and their social and economic conditions. (UNFCCC 1992, 2)

In line with that, the Paris Agreement also recognises and incorporates these principles. Article 6 of the Agreement offers a framework for voluntary cooperation to reach their climate targets and enables international cooperation to tackle climate change while providing financial support to developing countries. More specifically, a concrete mechanism to lower GHG emissions and promote sustainable development is introduced in Paragraph 4 in more detail. To ensure avoiding double counting of carbon pricing, Paragraph 5 of Article 6 puts in place robust accounting measures. Furthermore, Paragraph 6 pays specific attention to distributive justice, calling for a redistribution of resources:

> …a share of the proceeds from activities under the mechanism referred to in paragraph 4 of this Article is used to cover administrative expenses as well as to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation. (UNFCCC 2015, 8)

1.3. Revenue Recycling to Advance Climate Justice

Building on the previous two sections of the Literature Review, which addressed carbon pricing and climate justice, the thesis now investigates carbon pricing within the framework of climate justice. According to the literature and studies, carbon pricing can be made distributionally just

by recycling the generated revenue (Mintz-Woo 2024). Although it is commonly argued, as noted earlier in this thesis, that carbon pricing may have a disproportionate and unequal impact (Tank 2020), this view neglects the possibility of redistributing carbon pricing revenue to reduce its regressive effects.

If revenues from carbon pricing are redistributed to support those most affected, it can help offset the initial nature of carbon pricing and even contribute to distributive justice (Mintz-Woo 2021; Mintz-Woo 2024). This process, known as revenue recycling, involves returning (a share of) tax revenues to mitigate the regressive effects of carbon pricing. Typically, it works through redistributing the generated funds through tax incentives to individuals or by earmarking – designating them for particular purposes; in the case of carbon pricing, most commonly the development of green infrastructure (Farrell and Lyons 2016; Dolšak and Prakash 2022). Furthermore, recent Organization for Economic Cooperation and Development (OECD) research demonstrates that public support for climate policy, including carbon taxes and ETS, is higher when funds are redistributed proportionally to needs or when low-carbon technologies and clean projects are funded from the taxes collected (OECD 2023b)**.**

Ultimately, both dominant carbon pricing mechanisms, ETS and carbon taxes, show promise for yielding significant profits. In fact, revenues from these instruments hit a record high of nearly 100 billion USD in 2022 (WB 2023b)**.** While ETS are frequently designed to allocate their revenue to environmental initiatives, including the case of current EU ETS (Marten and Dender 2019; Black et al. 2022), most of the revenue from indirect carbon pricing mechanisms is generally not earmarked for specific goals. The differences in how ETS and carbon taxes allocate revenue can be explained by their underlying conceptual frameworks. Carbon taxes have traditionally contributed to a nation's general budget, so directing this

revenue toward a specific use could require legislative changes to the tax system as well as changes in citizens' attitudes (WB 2023b; OECD 2023b).

Even while the earnings from carbon pricing have reached a record high of almost 100 billion USD, the developing world is currently facing its own record – a record debt, reaching about 100 trillion USD by the beginning of 2023 (WB 2023b). Among other factors, as stated by the WB State and Trends of Carbon Pricing Report, this new record is caused by the unequal impact of climate change, primarily energy crisis and energy poverty (WB 2023b), only reconfirming and further highlighting the importance of climate mitigation approaches that advance climate justice with distributive elements.

Chapter 2 – Methodology

The research methods used in the study employ a multi-method qualitative approach, utilizing textual analysis combined with desk research, participant observation, and qualitative interviewing as the primary research techniques. The research approach and methodology are grounded in established practices and comprehensive guidance for the design, data collection and analysis, following the directions provided by Sage Research Methods (SAGE, n.d.).

Textual Analysis serves as the cornerstone of my research, providing an in-depth examination of a legal document (Regulation (EU) 2023/956 of the European Parliament and of the Council of May 2023, establishing a carbon border adjustment mechanism) to discern the underlying concepts, terms, and frameworks related to CBAM. This method contributes to clarifying the purpose and employment of the legal framework, highlighting the importance of analysing the relation of the policy on the third countries within the context of international climate action. Desk Research complementing the legal document analysis provides a broader context and background on the evolution of climate policy, carbon pricing mechanisms, and CBAM itself. By examining existing literature, studies, and reports, the argument and findings are situated within the wider discourse on CBAM and its impact.

A unique experiential component is added to the research through Participant Observation during the European Climate Summit (ECS), held April 16–18, 2024, in Florence, Italy. As Europe's largest environmental markets event, ECS focused on climate finance, carbon markets, and energy transition. With over 700 delegates from 43 countries, my participation provided me with a rare opportunity to engage with European and global leaders from across the sector. Through thematic analysis of conference speeches and informal discussions with various stakeholders from business, research, consulting, and other fields, I uncovered prevalent attitudes about CBAM, gained firsthand knowledge of the most recent

developments in carbon markets, and identified themes that emerge in climate policy. To maintain the confidentiality of the speakers, their names and precise employment information are not disclosed.

Qualitative Interviewing complements the other methods by offering insights from individuals directly involved in the EU ETS/CBAM policymaking. Through nine semi-structured expert interviews, I gathered diverse perspectives from policymakers of the key co-legislators at the European Commission, European Parliament, Council of the EU, and other crucial institutions involved in the process of planning and implementation. The interviews included in the thesis were conducted in April-May 2024 through various forms, primarily online. A combination of open and closed questions was utilized; the fundamental question set used is available in the Appendices under the Interview Guide. To preserve the respondent confidentiality, neither their names nor the specific time of their involvement are disclosed. Still, to provide readers context for the interviewees' professional backgrounds without jeopardizing their anonymity, details about their workplace and position are included in the Appendices under the Description of Interviewees. With the use of this approach, a more profound understanding of policy development is obtained, revealing the varying interpretations and motivations behind policy decisions.

Lastly, the study is informed by a number of expert consultations with specialists, including Mrs Maryla Maliszewska from the WB, whose study on countries' exposure to the EU CBAM is used as one of the primary foundations of the research, and Dr Sanna Markkanen, the Head of Policy Analysis at the Cambridge Institute for Sustainability Leadership, whose study On the Borderline: The EU CBAM and its place in the world of trade also served as a crucial point of the thesis.

Chapter 3 – EU CBAM Analysis: Current State and Projected Development

The Analysis creates a core of the thesis, examining the Regulation, possible negative consequences of CBAM and potential solutions to these implications. The Chapter consists of literature alongside expert remarks gathered at the ECS 2024 and through interviews. The Section 3.1. consists of a thorough textual analysis through the lens of climate justice. Section 3.2 elaborates on the impact of exporting countries to the EU, paying particular focus on developing countries and the trade-climate relationship. Lastly, Section 3.3 offers a solution of revenue recycling as a compensation mechanism within CBAM and concludes with describing additional initiatives and future projections.

3.1. Legal Document Analysis

The legislative act that will be discussed and elaborated is the 53-page Regulation (EU) 2023/956 of the European Parliament and of the Council of May 2023, establishing a carbon border adjustment mechanism. Other related legislative acts include two regulations [11] establishing the so-called Social Climate Fund and transforming current EU ETS and two directives[12] focused on GHG emission reduction targets, allowance system and its market trading. Nevertheless, this section is dedicated to reviewing the language of solely one piece of the Regulation establishing CBAM. The primary focus is on dissecting and evaluating the

[11] 1) Regulation (EU) 2023/955 of the European Parliament and of the Council of 10 May 2023 establishing a Social Climate Fund and amending Regulation (EU) 2021/1060; 2) Regulation (EU) 2023/957 of the European Parliament and of the Council of 10 May 2023 amending Regulation (EU) 2015/757 in order to provide for the inclusion of maritime transport activities in the EU Emissions Trading System and for the monitoring, reporting and verification of emissions of additional greenhouse gases and emissions from additional ship types.

[12] 1) Directive (EU) 2023/958) of the European Parliament and of the Council of 10 May 2023 amending Directive 2003/87/EC as regards aviation's contribution to the Union's economy-wide emission reduction target and the appropriate implementation of a global market-based measure; 2) Directive (EU) 2023/958 of the European Parliament and of the Council of 10 May 2023 amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union and Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading system.

linguistic aspects, clarity, and precision of the text. This analysis is crucial as the language used in legislation serves as the foundation for the interpretation of concepts and their subsequent implementation in practice.

To begin with the EU's commitment to a "just and inclusive transition for all", neither the words "justice", "inclusion", nor "equal/equality" were used in the particular Regulation. However, adjectives "just" and "inclusive" are used right at the beginning of the legislation: "…transformation must be **just** and **inclusive**, leaving no one behind" (EUR-Lex 2023, 52). The statement represents a dedication to ensuring energy transition fairness for all. Despite this initial remark, the legislation does not clarify who is referred to by "no one"; if it addresses only EU citizens or encompasses its legal borderlines, especially since the transition must be global and CBAM has transborder implications.

The following statement focusing on the terms "protect/protection" might help to answer the question raised in the previous paragraph. Similarly, the introductory part states: "The European Green Deal aims to **protect,** conserve and enhance the Union's natural capital, and to **protect** the health and well-being of citizens from environment-related risks and impacts" (EUR-Lex 2023, 52). Building on that, the main concern is the emphasis is firmly on "Union's natural capital" instead of framing it globally. Furthermore, the Regulation suggests that under "citizens" it aims to addresses and protect only the citizens of the EU Member States not outside of the EU even though its impact will affect individuals from third countries too.

With the goal of tackling the preceding concerns, the focus is further on the relationship between the EU Member States and third countries. Given the number of applicable remarks to these relations, it appears the legislation aspires to approach the issue extensively – expressions "developing country/countries" and "least developed country/countries (LDC)" are mentioned twice (with additional three references of the abbreviation "LDC") while the

expression "third country/countries" is used 118 times. Although most of the "LDC" mentions deal with the technical aspects of the implementation, a few are still very relevant for the purposes of this study. As for the developing countries and the least developed countries, the essential reference for the argumentation includes: "The Union should provide **technical assistance** for those purposes to **developing countries** and to **least developed countries** as identified by the United Nations (LDCs)", and "The report shall contain an assessment of: ... the impact of this Regulation on goods listed in Annex I imported from **developing countries** with special interest to the **least developed countries** as identified by the United Nations (LDCs) and on the effects of the **technical assistance** given" (EUR-Lex 2023, 62, 84).

As for the broader "third country/countries" reference, three common themes can be found: the ambition to help countries achieve decarbonisation practices, the desire to provide financial and technical support, and the establishment of fair and balanced cooperation while acknowledging the different conditions of the countries. Statements, such as "The CBAM is expected to also contribute to promoting decarbonisation in **third countries**", and "Those **third countries** should, however, develop a roadmap and commit to implementing a carbon pricing mechanism providing for a price that is equivalent to EU ETS, and should commit to achieving carbon neutrality at the latest by 2050 as well as to align with Union legislation in the areas of environment, climate, competition and energy" (EUR-Lex 2023, 54, 60), highlight the EU's ambition to foster energy transition worldwide.

Furthermore, the legislation clearly states that this process will be backed by financial and technical assistance from the Union: "In order to further support the achievement of the goals of the Paris Agreement in **third countries**, it is desirable that the Union continue to provide **financial support** through the Union budget towards climate mitigation and adaptation in LDCs, including in their efforts towards the decarbonisation and transformation of their

manufacturing industries", and "…the Union is committed to working with and supporting **low and middle-income third countries** towards the decarbonisation of their manufacturing industries as part of the external dimension of the European Green Deal and in line with the Paris Agreement. The Union should continue to support those countries through the Union budget, especially **LDCs**, in order to contribute to ensuring their adaptation to the obligations under this Regulation" (EUR-Lex 2023, 62). There are several other references concerning the support that should be provided, further highlighting that the intention to aid the developing world might lead to more global equality and environmental justice.

Lastly, there is a common theme throughout the Regulation that embraces fair, equal, and balanced international cooperation while considering the diverse circumstances of the affected countries. These statements are most notably underlined within the sentences: "A dialogue with third countries should continue and there should be space for cooperation and solutions…" and "The Commission should strive to engage in an even-handed manner and in line with the international obligations of the Union with the **third countries** whose trade to the Union is affected by this Regulation, in order to explore the possibility for dialogue and cooperation regarding the implementation of specific elements of the CBAM" (EUR-Lex 2023, 11). Furthermore, the legislation proposes the creation of the "Climate Club" forum of nations with carbon pricing instruments or other analogous instruments to promote the implementation of climate policies in all countries and pave the way for a global carbon pricing framework. Such a club "should be open, voluntary, non-exclusive and directed in particular at aiming for high climate ambition in line with the Paris Agreement" (EUR-Lex 2023, 11), which again calls for the establishment of a fair approach to everybody participating in the transition.

The inclusive nature of the legislation is further bolstered by the proclamations, such as "Where an unforeseeable, exceptional and unprovoked event has occurred that is outside the

control of one or more **third countries** subject to the CBAM, and that event has destructive consequences on the economic and industrial infrastructure of such country or countries concerned, the Commission shall assess the situation and submit to the European Parliament and to the Council a report, accompanied, where appropriate, by a legislative proposal, to amend this Regulation by setting out the necessary provisional measures to address those exceptional circumstances" (EUR-Lex 2023, 86), which indicate the understanding and acceptance of different conditions of the countries involved alongside the objective to act accordingly.

Despite the stated intentions, however, the interpretation of these "necessary provisional measures to address exceptional circumstances" lacks clarity on the financing of these measures. It is suggested by the legislation that the funds raised would, in fact, contribute to the EU's resources since it states: "The Union is working towards introducing a new own resource based on the revenues generated by the sale of CBAM certificates" (EUR-Lex 2023, 62). There are two more mentions about the revenue, stating the Member States are responsible for the generated revenue and any losses of this revenue should be avoided. Nevertheless, the expected amount and its specific purpose is not mentioned (EUR-Lex 2023, 62, 63).

3.2. Implications

3.2.1. Impact on Exporting Countries

As stated in the initial impact assessment of the European Commission: "The impacts will depend to a great extent on the sectors concerned" (European Commission 2020). Since CBAM currently encompasses only six sectors, its immediate quantitative effects are relatively modest yet (Stanway 2024). But as the scope of the policy is expected to rise, its impact will gradually

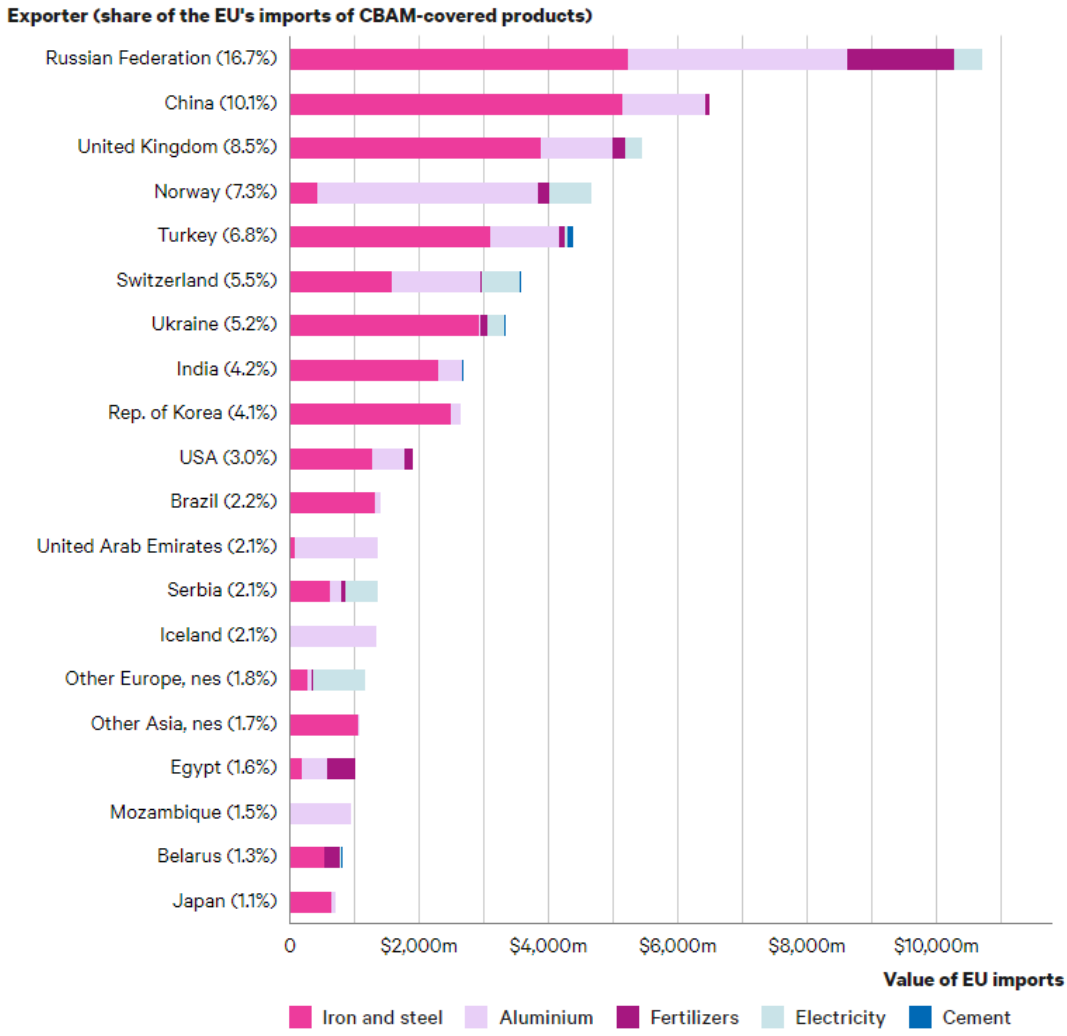
become more influential. As for the emissions[13] covered, the current Regulation covers Scope 1 for iron and steel and aluminium, Scope 1 and Scope 2 for other products (cement, electricity, fertiliser, aluminium, hydrogen). The projected plan is to expand to cover Scope 1 and Scope 2 emissions for all CBAM-covered goods and include new sectors, such as coking coal, asphalt bitumen, petroleum products and others. In addition, but yet not scheduled, future developments suggest covering the Scope 3 emissions and eventually, all emissions-intensive-trade-exposed (EITE) industries or even all products. These changes would cover substantially more exports and more producers, amplifying the impact on some third countries, as echoed by one of the interviewees (I8)[14]. Although expanding CBAM improves carbon leakage oversight, it raises other issues, such as general complexity, reporting requirements, and compliance concerns (Chepeliev et al. 2023; Maliszewska et al. 2023).

Therefore, a number of nations that are trading partners with the EU have expressed concerns about the potential effects of the CBAM on their economies. The findings indicate that while the macro-level impact on EU trading partners would be relatively limited, certain manufacturers of EITE goods, such as those in Russia, China, India, Turkey, and Ukraine, could experience significant consequences (Chepeliev et al. 2023). S&P Global Commodity Insights' analysis indicates that Canada, Brazil, South Africa, and Turkey will be most affected, with the iron and steel industry being the primary target (Gupte 2023; S&P Global Commodity Insights 2024). The largest exporters to the EU for CBAM-covered products by country are shown in Table 1, with Russia, China and the United Kingdom leading the chart (Kardish et al. 2021).

[13] Emissions are categorised within three Scopes: Scope 1 covers direct emissions from own or controlled sources; Scope 2 covers indirect emissions associated with the energy generation and purchase of electricity, heat, and steam used in production; and Scope 3 covers all other indirect emissions in the supply chain (Maliszewska et al. 2023).

[14] The Chapter Analysis incorporates insights gathered from interviews. Information about the respondents' backgrounds can be found under the corresponding acronyms, e.g. I8, in the Description of the Interviewees Appendix.

Table 1: EU-27 imports of goods covered by the CBAM proposal, top 20 exporters, annual average 2015-2019



Source: Kardish et al. 2021

However, merely comparing export volume does not offer a complete assessment of a nation's exposure. Different methods of calculation analyse the effect on exporting countries in several distinct manners: some emphasise the percentage of exports to the EU, others the percentage of a country's gross domestic product (GDP) that comes from the exports, another focus on specific industry sectors, etc. To better visualise the actual impact of CBAM on respective countries, the WB, with Mrs Maliszewska at the forefront, developed the CBAM Exposure Index. The Index is a comprehensive interactive tool evaluating a nation's relative exposure across all relevant products, based on three essential components: CBAM-goods exports to the EU, trade-weighted relative CO2 emissions intensity of exports, and standardised

carbon price/cost of CBAM certificates. A country's export percentage reflects its commerce reliance on the EU; higher dependence presents difficulties in finding other markets outside the EU. Table 2 presents the countries[15] in order according to their aggregate relative exposure to CBAM (WB 2024b). The full Index, as composed and shared by the WB, also includes negative values, which indicate that certain exporters that follow a decarbonisation route and are relatively clean might become more competitive in the EU market. While acknowledging these results, Table 2 includes only countries whose Index value is positive, that is, more than 0.000, for which CBAM demonstrates some adverse consequences.

[15] To avoid misinterpretation of data, the WB Index map did not include nations with negligible export volumes (less than 1 million USD of all CBAM product exports). Still, the analysis is robust as it encompasses 120 nations when the trade and emissions intensity variables are combined (WB 2024b).

Table 2: WB Aggregate Relative CBAM Exposure Index (positive values)

Country	Product exports to the EU (% of product exports to the world)	Product exports to the EU (% of GDP)	Aggregate relative CBAM exposure Index	Most exposed sector
Zimbabwe	87%	0%	0,087	Iron and steel
Ukraine	37%	2%	0,053	Cement
Georgia	35%	0%	0,046	Fertiliser
Mozambique	74%	7%	0,045	Aluminium
India	19%	0%	0,031	Iron and steel
Belarus	50%	1%	0,030	Cement
Trinidad and Tobago	12%	1%	0,030	Fertiliser
Egypt, Arab Rep.	38%	0%	0,022	Fertiliser
Russian Federation	31%	1%	0,020	Electricity
Kazakhstan	14%	0%	0,016	Aluminium
Venezuela	45%	0%	0,015	Iron and steel
Cameroon	93%	0%	0,012	Aluminium
Tajikistan	18%	0%	0,010	Aluminium
South Africa	17%	0%	0,009	Iron and steel
Turkey	43%	1%	0,005	Electricity
Iran, Islamic Rep.	5%	0%	0,004	Fertiliser
Tunisia	43%	0%	0,004	Cement
Vietnam	6%	0%	0,004	Iron and steel
Azerbaijan	16%	0%	0,004	Fertiliser
Bahrain	14%	1%	0,004	Cement
Hong Kong, China	5%	0%	0,003	Iron and steel
China	9%	0%	0,003	Cement
Brazil	11%	0%	0,002	Iron and steel
Oman	3%	0%	0,002	Aluminium
Saudi Arabia	2%	0%	0,002	Cement
Indonesia	6%	0%	0,002	Iron and steel
United Arab Emirates	14%	0%	0,002	Aluminium
Pakistan	1%	0%	0,002	Cement
Argentina	2%	0%	0,001	Iron and steel
Peru	1%	0%	0,001	Iron and steel
Malaysia	6%	0%	0,001	Cement
Kuwait	3%	0%	0,001	Cement
New Zealand	5%	0%	0,000	Fertiliser
Mexico	2%	0%	0,000	Fertiliser
Thailand	4%	0%	0,000	Iron and steel
United States	10%	0%	0,000	Cement
Canada	3%	0%	0,000	Iron and steel
Korea, Rep.	10%	0%	0,000	Iron and steel
Singapore	1%	0%	0,000	Iron and steel
Philippines	2%	0%	0,000	Cement
Costa Rica	1%	0%	0,000	Iron and steel
Australia	1%	0%	0,000[16]	Aluminium

Source: WB 2024b

[16] All numbers marked as 0,000 are rounded, the real value is higher than absolute zero.

3.2.2. Impact on Exporting Developing Countries

Decarbonisation in developing countries is absolutely essential since they collectively account for 63 % of global greenhouse gas emissions, whereas the EU contributes only 9 % (CGDEV 2015). With the narrowed focus of the thesis, the Analysis spotlights the impact on these countries and, more precisely, on countries and territories that qualify for official development aid (ODA) based on WB-published gross national income per capita. The Current OECD Development Assistance Committee List of ODA Recipients[17] includes UN-defined LDCs, low-income countries, lower middle-income countries and territories, and upper-middle-income countries and territories (OECD 2023a). According to S&P Global Commodity Insights' study on CBAM, developing nations will be the most vulnerable (Gupte 2023; S&P Global Commodity Insights 2024). Among LDCs, the exporting country expected to be impacted the most is Mozambique[18], with an aggregate relative CBAM exposure index value of 0.045. Other developing countries included in the OECD categorization of low-income, lower-middle-income or upper-middle-income countries and territories that will be to some degree impacted by CBAM (having an aggregate relative CBAM exposure index of more than 0.000) [19] are Zimbabwe, Ukraine, Georgia, Mozambique, India, Belarus, Egypt, Kazakhstan, Venezuela, Cameroon, Tajikistan, South Africa[20], Turkey, Iran, Tunisia, Vietnam, Azerbaijan, China, Brazil, Indonesia, Pakistan, Argentina, Peru, Malaysia, Mexico, Thailand, Philippines, Costa Rica – all highlighted in Table 2.

[17] The complete OECD Development Assistance Committee List of ODA Recipients can be found under Appendices.
[18] For better visualisation, 97 % of the nation's aluminium exports are transported to the EU (Maliszewska et al. 2023)
[19] I listed countries that, according to the WB, demonstrate an aggregate relative CBAM exposure index of more than 0.000 based on Table 2 and are, at the same time, eligible for ODA, thereby classifying as developing countries.
[20] South Africa is estimated to have the highest CBAM expenses among all nations by S&P Global Commodity Insights Forecast CBAM cost 2026–2040, with a value of 84.45 billion EUR (Gupte 2023).

The evaluations provided in the study serve to demonstrate the estimated impact of CBAM, but they do not necessarily provide a complete picture; the study aims not to determine which country will be impacted the most or to which degree. The study also acknowledges that the LDCs are not necessarily the biggest exporting countries, but "while it might be a small share for the EU, it might be a big share for them" (I2). Simultaneously, while metrics, such as the CBAM Exposure Index, export to the EU volume, or the percentage of a developing country's GDP derived from CBAM-products exports to the EU may currently appear minimal by number, as emphasised in sub-Section 3.2.1., CBAM's significance will increase with the anticipated broadening of CBAM's emissions scope and sectoral coverage. As the commitment to climate policy is growing internationally, a more profound comprehension of the distributional and inequality implications is crucial to prevent any adverse consequences (Markkanen and Anger-Kraavi 2019).

3.2.3. Tackling Climate through Trade

Considering the CBAM's objective to tackle climate change and reduce emissions through trade, it is crucial to examine the nature of CBAM, understand its implications and propose potential solutions. According to official statements, CBAM is a climate measure with the primary goal of preventing carbon leakage (I1, I2, I6). However, there are authors categorizing a border carbon adjustment rather as a trade measure (Cosbey 2008; Markkaken et al. 2021; Dillon et al. 2024; Khúlová et al. 2024), and in the case of CBAM, in particular, some scholars claim that it is not to be designed adequately to distinguish between countries according to the principles of climate justice (Dillon et al. 2024)**.** On the other hand**,** selected policymakers among respondents would argue that CBAM combines both climate and trade objectives, intending to lead industries toward greener practices (I7, I9) while fulfilling its purpose of protecting the internal market (I8). Despite assertions that CBAM is an environmental measure rather than a protectionist (Executive in Climate and Sustainable Transition Policy, participant

observation at ECS 2024), high-income nations see it as such, while low-income nations see it as a developmental obstacle (I8). Even though CBAM was never intended to target certain countries but rather companies, ensuring that the practices are compatible with the WTO international trade rules and not viewed as protectionist by other countries presents a significant challenge from the international relations perspective (I1, I2, I5, I6, I9), particularly because several trading partners still object to its "restrictive" character (Canestrini 2023).

Regardless of its framing, CBAM was claimed to reflect "the misalignment of the European policy" (I9) and "the very contradictory nature of climate awareness" that exists within the EU (I4). The assertion, uttered by one of the interviewees, can be supported by the disclosure that the idea of a European border carbon adjustment was supposedly incentivized by the European steelmakers who wanted to prevent cheap competition in third countries with emission-intensive production and loose emissions standards (I5). Respondents claim that the EU applies its economic power and interdependence to align non-EU actors with its climate targets through the "Fit for 55" package, aiming to enhance the competitiveness of the European industry, increase its influence through financial mechanisms and position the EU as a leader in the transition (I6, I7). Despite that, there have already been voices that the current EU CBAM does not provide sufficient protection for the European industry itself (Climate Policy Manager of a European company, participant observation at ECS 2024), potentially leading to issues, such as diminished EU competitiveness, burdensome customs obligations or prices increase (I3, I8, I9).

Concerns about the impact of CBAM have been discussed within the EU, but they have also been discussed outside the EU. While Europe is the lead, its ongoing prosperity relies on timely collaboration with other nations (Senior Leadership Figure at UNFCCC, participant observation at ECS 2024). In that manner, the CBAM's potential harm to developing nations

has been brought up by a number of parties, as particularly these regions face "social, economic, legal, and political barriers" to putting carbon pricing schemes like CBAM into practice (WB 2023b; Dillon et al. 2024). There are arguments that the mechanism fails to fully take into account the principles of CBDR and climate justice ethics, especially in light of the EU's per capita emissions of over 5 tonnes, which are significantly higher than the 0.3 and 1.5 tons of low- and lower-middle-income nations (Pleeck and Mitchell 2023; Dillon et al. 2024). Particularly, LDCs frequently requested a thorough analysis of the measure's effects on EU trading partners, claiming that it unfairly affects less developed, poorer nations who lack the administrative capacity and climate legislation to comply with CBAM (Benson et al. 2023; Dillon et al. 2024).

Even though the impact assessments have shown that only certain countries with specific industries will be affected, the nature of the CBAM leads to unevenly distributed impacts across the globe (I8), questioning its climate justice elements. In this regard, "the EU should be able to take care of itself, but it is the developing world that needs help" (Senior Executive at UNFCCC, participant observation at ECS 2024), yet helping third countries to offset the implications of the measure may reduce CBAM's real effectiveness (I8). Conclusively, a diverse range of reactions is anticipated: some exporting countries, primarily the most economically developed ones, will try to introduce their carbon pricing mechanism (Canada, United Kingdom, Turkey, etc.) (OECD 2023b; WB 2023b; Turkish Climate Change Expert and British National Expert, participant observation at ECS 2024). Conversely, there may also be efforts to redirect exports to countries with less stringent emissions pricing policies (Canestrini 2023). Even though some companies are already considering redirecting their trade relations (I5), given the complexity of relocating enterprises, the most likely outcome is that the majority of companies will continue exporting to the EU despite potential challenges related to MRV of emissions (I4, I6, I9).

3.3. Solutions

3.3.1. Revenue Recycling as a Compensation Arrangement

> "Revenue recycling would make from CBAM a clear climate instrument incorporating global justice perspective" (I4).

The argument frequently presented by academics and policymakers is that the potential solution addressing any negative implications of CBAM for developing countries would be incorporating a compensation mechanism through revenue recycling (Markkaken et al. 2021; Brandi 2021; Beaufils et al. 2023). Given the current global momentum for carbon pricing, its mechanisms, including CBAM, emerge as one of the most powerful climate mitigation tools we have at our disposal (Senior Officer at the European Commission DG CLIMA and Senior Academic and Leadership Figure, participant observation at ECS 2024). Therefore, the proper use of revenue is critical; it should be earmarked and used for environmental and distributional purposes (Senior Academic and Leadership Figure, participant observation at ECS 2024). In that regard, sharing a part of CBAM earnings would be beneficial for enlisting and gaining the support of other nations. The combination of carbon pricing, redistribution of carbon revenue and global cooperation is necessary to reach ambitious climate targets (Senior Academic and Leadership Figure and Senior Carbon Market Expert, participant observation at ECS 2024).

The allocation of CBAM's revenue is a critical macroeconomic factor that affects economic outcomes and reactions (Markkaken et al. 2021). As for now, 25 % of CBAM revenue is retained by EU Member States, with the remaining 75 % being allocated to the EU budget[21] (I1, I2, I4, I5, I8). The assigned collector of these revenues is the Member State's competent authority, where the third country producers (the declarant) reside. Annually, following the European Commission's call for funds in February, there is a transfer to the EU

[21] The calculation and distribution are the same as in the case of customs duties, one of the traditional EU budget resources (I5).

budget (I8). Concerning the 75 % allocated for the budget, the drawback is that there are no confirmed details about its usage (Carbon Market Watch 2024). As there is yet no final agreement, the Council is engaged in an ongoing discussion about the "own resource" decision and negotiations about the EU budget as a part of the new multiannual financial framework for the upcoming period, are scheduled (European Parliament 2023b). Nevertheless, the debate is currently about other resources rather than revenues from CBAM or ETS (I1, I2). Conversely to ETS, whose share of revenue is earmarked for the energy transition in the Member States or goes into the Innovation and Modernization Fund[22] within the EU (I2, I3), the revenue in the case of CBAM is without any particular purpose assigned. On the one hand, no earmarking enables flexibility, which is necessary when faced with contemporary issues like supporting industries and maintaining employment in the wake of unforeseen crises such as the COVID-19 pandemic and the war in Ukraine (I6). On the other hand, earmarking the share of the revenue, i.e., to climate finance action in developing countries, would offer a partial compensation arrangement under CBAM (I4).

It has been argued that if reducing emissions were the principal objective of CBAM, revenue would be directed toward climate projects in the exporting nations (Schneider 2024). Despite the proposals outlining plans to use its revenue for decarbonising affected businesses in less developed nations, the EU Member States did not support this idea (Benson et al. 2023; Pleeck and Mitchell 2023; Agarwal 2024). Even though incorporating revenue redistribution into CBAM was not successful, it was keenly debated within the EU, particularly in the European Parliament[23] (Dillon et al. 2024). Specifically, the ENVI Committee stated that

[22] Both funds support the projects within Europe (European Commission 2024d; European Commission 2024e).
[23] The CBAM proposal was referred to the European Parliament's ENVI Committee. The Committees for opinion were INTA, BUDG, ECON, ITRE and IMCO (European Parliament 2023a).

revenue from CBAM should "accrue to the EU budget and be reflected in an increased support to LDCs decarbonisation efforts" (European Parliament 2023a). This element was fully lost during negotiations in the Council; nonetheless, as seen in Section 3.1., the terms of the current Regulation stipulate that the EU must offer developing nations and LDCs technical assistance for them to comply with the CBAM suggesting that the EU budget should be used to fund those nations' decarbonisation efforts (Benson et al. 2023). However, it is not supposed to be directly funded through the CBAM-generated revenue allocated in the EU budget (I2, I4, I6), and therefore, the total and kind of this assistance remains uncertain.

Regarding the amount of the CBAM-generated revenue, it will be determined by the degree to which the EU ETS free allocation is phased out and the corresponding border measure is phased in, starting fully in 2026 (CBAM is not expected to generate any revenue during the transition period from 2023 to 2025). Within its original proposal for the Regulation, the European Commission estimated that "total yearly revenues from the border measure alone are expected to amount to 2.1 billion EUR are expected to be raised by the border measure and EUR 7 billion from additional", reaching potentially 9.1 billion EUR annually by 2030 (European Commission 2021a, 59; Pleeck and Mitchell 2023; Dillon et al. 2024). Even though the European Commission states that "revenue generation is not a primary objective of CBAM" (European Commission 2021a, 48), and the policy was "not designed to be a money-making mechanism" (I6), the earnings that will be generated could still be substantial, especially considering the planned broadening of CBAM emissions and sectoral coverage.

Ultimately, as there are proponents of incorporating revenue recycling into CBAM and findings supporting the idea, this thesis confirms its argument that CBAM revenue should support climate action in the most vulnerable countries, creating a clear environment-oriented instrument aligning with the EU's goal of a "just and inclusive transition for all" and

acknowledging recognised climate justice principles, including CBDR. Such revenue redistribution should consider the total share of trade, the highest share of exports, sectoral coverage as well as emissions coverage. While some would go even further and demand the complete allocation of CBAM revenue towards climate action initiatives in vulnerable nations, aimed at guaranteeing an equitable transition and undebatable adherence to international trade regulations (Carbon Market Watch 2024), others advocate instead developing a complementary mechanism that will reduce the impact of CBAM on LDCs (Dillon et al. 2024). Nonetheless, tailored solutions should be identified for developing countries with the highest exposure to CBAM, and respective measures should be linked domestically alongside offering technical support, financial aid, and counselling to trading parties (Dillon et al. 2024).

Bearing in mind the risk of affecting CBAM benefits to the EU and anticipated carbon reductions, compensation measures would alleviate some of the concerns regarding the climate fairness of CBAM in the context of the just transition in line with the EGD and broader Paris Agreement objectives (Markkaken et al. 2021). In any other case, it might happen that opposed to aiding the developing world to accomplish its climate goals, exporting countries' revenues will bolster the EU's already ambitious pledges (Agarwal 2024), making the transition beneficial to the EU yet disproportionately burdensome for some developing countries.

3.3.2. Additional Initiatives

In a quest to provide a holistic outlook of the Analysis, additional initiatives supporting revenue recycling, presenting counterarguments, or creating new conditions were taken into account. As already outlined, the expected development, according to the EU, is that countries will implement their carbon pricing mechanisms. Additionally, presenting potential suggested solutions addressing the negative repercussions of CBAM to developing countries comprise

the following options: exempting relevant countries/enabling carbon price reduction on certain imports or establishing (new) funds to compensate for the impact.

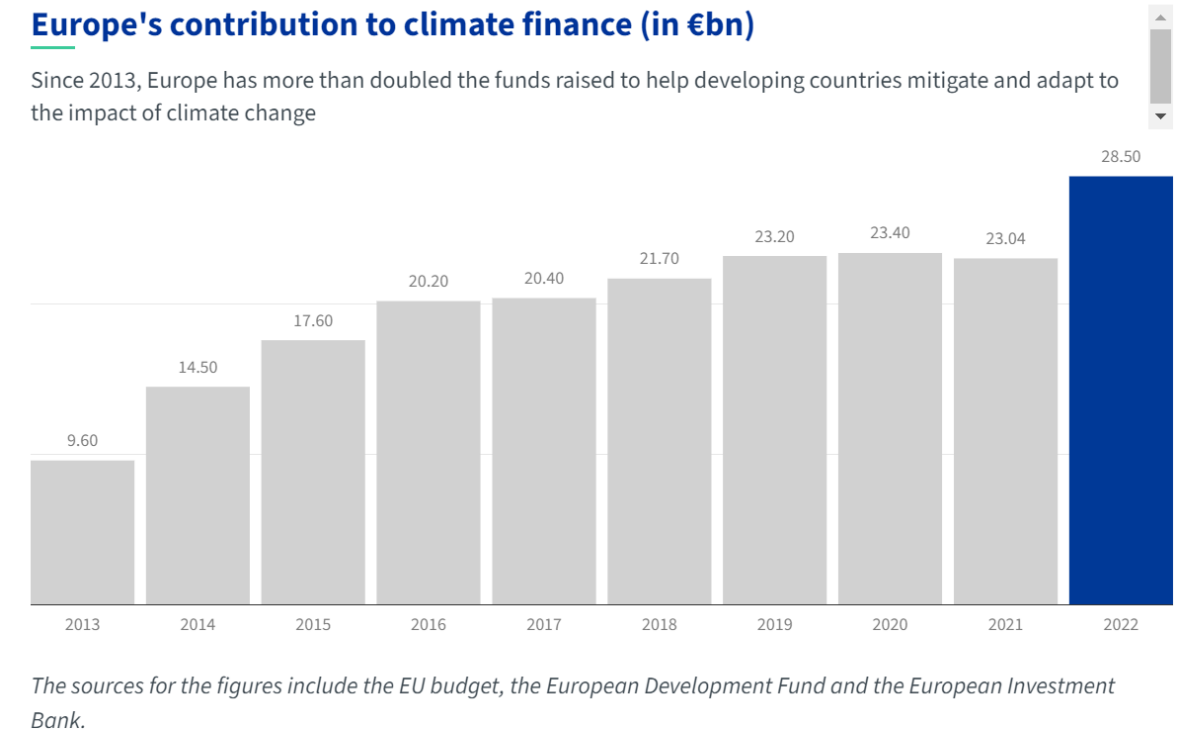
The ideal outcome of the policy is that due to the high costs of CBAM certificates, the close to the total absence of a literal exemption policy and the lack of a direct compensation mechanism, countries will be compelled to implement own carbon pricing mechanisms – whose revenue would be dedicated to their national budgets. In such cases, if the price paid in the country is equal to the price they would pay at the European market, then, in accordance with WTO rules, they would not have to pay an additional cost and could manage the generated revenue arbitrarily. In this regard, international initiatives assist nations in implementing their respective carbon pricing policies, i.e., the WB Partnership for Market Implementation program offers technical support for implementing domestic carbon pricing and applying Article 6 of the Paris Agreement. However, since particularly developing countries confront significant internal obstacles, a number of their domestic initiatives have been for an extended period "under consideration" (WB 2023b). Several more years or decades might be required for the development and implementation of these carbon pricing schemes – especially considering that even the CBAM, originating in the developed world, requires close to ten years of development before achieving successful implementation (Policy Executive at International Emissions Trading Association, participant observation at ECS 2024).

A country-specific approach towards developing nations would be more appropriate in the case of CBAM, as argued by trade scholars, environmental NGOs, advocacy groups, and others; however, assigning different carbon rates to different countries would significantly increase the level of complexity of the already complicated system (Dillon et al. 2024). Even though there are few scenarios which exempt the countries from paying the CBAM fee, e.g., participation in EU ETS, own domestic carbon fee leading to CBAM fee deduction, integration

in the EU electricity market under certain conditions (I8), granting a full exemption to LDCs would not encourage them to decarbonise production; instead, it might even disincentive such endeavours (I2). While the EU already has other initiatives that exempt imports from LDCs coming into the EU, i.e., the Everything but Arms scheme, which removes taxes and quotas for all imports of goods (except weapons and ammunition) (Pleeck and Mitchell 2023), exempting particular developing countries under CBAM could jeopardize its entire climate objective.

Yet another choice is to create a completely new fund dedicated to compensating the affected countries. For instance, there were suggestions to establish the European Climate and Sustainable Development Bank in an effort to consolidate the EU development policy that would work in partnership with already existing instruments (Leonard et al. 2021). In that manner, perhaps the strongest argument presented is that compensation for CBAM will continue to come from already established instruments for external policies, such as the Neighbourhood, Development, and International Cooperation Instrument (NDICI), which respondents highlight as the instrument to provide financial and technical assistance to LDCs (I2, I5, I9), allocating 79.5 billion EUR in total for the years 2021-2027 (European Commission 2024d). As presented in Table 3, with 28.5 billion EUR from public sources and an additional 11.9 billion EUR from private funding in 2022, the EU and its Member States continue to be the biggest contributors to climate finance and development assistance globally (Council of the European Union 2024; European Commission 2024a).

Table 3: Europe's contribution to climate finance



Source: Council of the European Union 2024

While the EU's role in helping developing nations fight climate change is indisputable, overlooking the potential of leveraging CBAM as a compensation mechanism for these countries may seem counterintuitive and puzzling, regardless of the expected CBAM-generated revenue or other sources dedicated to climate finance in those countries. The UN Conference on Trade and Development advocates globally for an increase in climate finance as well as the establishment of a unified accounting framework, improving transparency and preventing double counting. The attention is drawn, in particular, to the sizable financing gaps the LDCs suffer, notwithstanding their vulnerability and lack of preparedness for climate change. This emphasizes how critical it is to raise funds for both development and climate transition in order to assist these countries (UNCTAD 2023). Existing third-world aid programs are clearly insufficient, reflecting the inadequacy of current climate action efforts – claims that we have done enough are frustrating as long as tangible results are still lacking (I4).

3.3.3. Future Projections

"Look, see, and be prepared to change if necessary" (I7).

Still, the fact that CBAM is in the transition period and the system will be finalized only by 2025 raises hope and promotes assurance that several expressed concerns will be addressed by then. As a part of these efforts, in April 2024, the European Commission established a Task Force International Carbon Pricing and Markets Diplomacy, aiming to strengthen carbon outreach and assist third countries in setting the system and continuing the ambitions outlined in Article 6 of the Paris Agreement (Senior Officer at the European Commission DG CLIMA, participant observation at ECS 2024). Essentially, the whole duration of the transition period serves as a timeframe to learn and ensure the system "works for everyone" (I1, I2). At the end of this period, the European Commission will release a report evaluating the system. This assessment will rely on emissions data reported by third-country producers; therefore, it is crucial that this data reflects actual emissions and is not the default data already provided by the European Commission and weighed in the previous impact assessment. As expressed by the European Commission's officers, the assessment is essential in estimating the impact on developing countries and LDCs and, if necessary, taking appropriate action (I1, I2).

While acknowledging the ongoing efforts, there are a few legitimate caveats. Most importantly, there is a real risk of assessing incorrect and incomplete data, resulting in wrong conclusions (Climate Policy Manager at a European company, participant observation at ECS 2024). Considering the challenges of gathering and verifying data in third countries, the policy must balance data transparency alongside streamlining the MRV processes (Canestrini 2023). Since many developing countries either lack emissions data for the EU reporting or are reluctant to share them due to confidentiality concerns (I2, I4, I5), it is possible that the final assessment report may rely on the default data that the Commission already provided at the

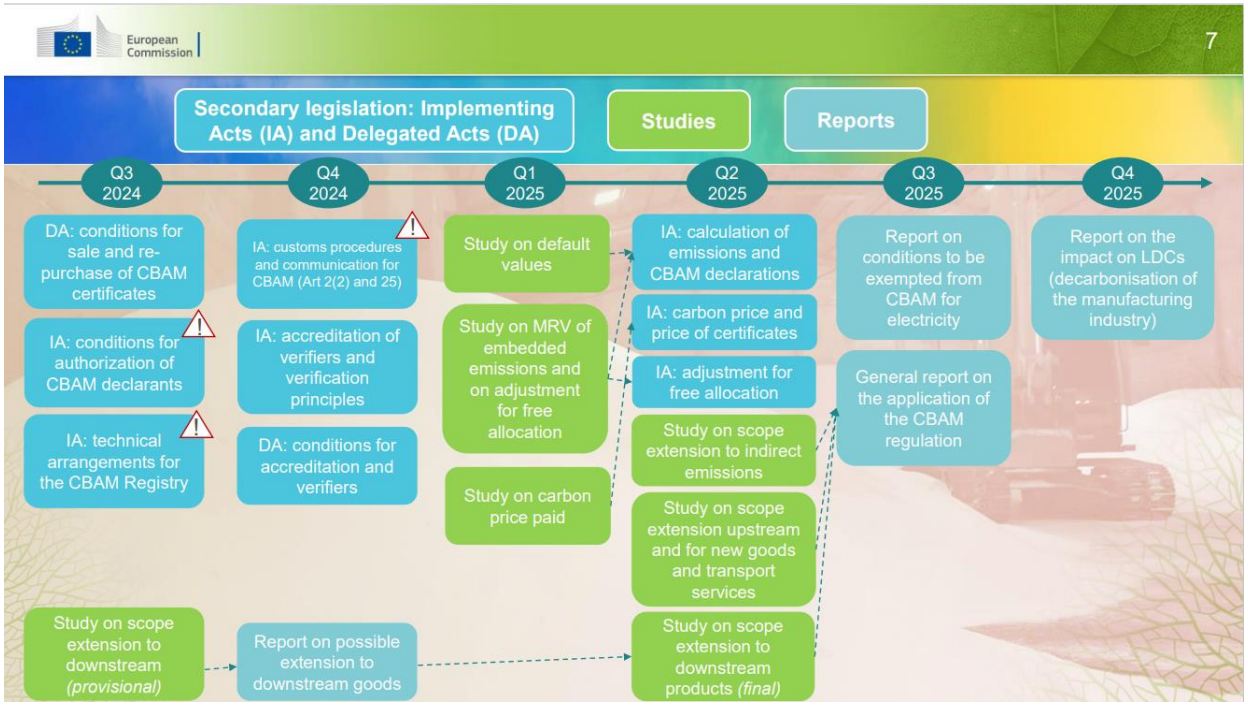
beginning of the transition period which would prevent an accurate and comprehensive examination.

Secondly, "there are arguments that the new Commission will be switching out their priorities and the Green Deal will be less of a priority and the boosting up industry will be more of a priority" (I7). A similar case is being claimed for the European Parliament. A few internal EU officers expressed their concerns about potential changes that the 2024 elections of the European Parliament and the European Commission could bring and what influence they will exercise on redirecting the focus from climate and development aid towards internal issues within the EU (I4, I7, I9).

Lastly, even if the final assessment report demonstrates the real impact on selected developing countries, incorporating any substantial changes benefiting these countries is not anticipated or technically doable within the given timeframe. This conclusion is based on the European Commission's Legal Workplan, provided by one of the interviewees. Related Table 4 and Source: European Commission

Table *5* demonstrate that there is an anticipated issue of nine pieces of secondary legislation (implementing acts and delegated acts), which was also confirmed by the European Commission's officers (I1, I2). As shown, all secondary legislation and both the technical and policy amendments to CBAM Regulation are expected to be finalized by the third quarter of 2025 before the Report on the impact on LDCs will be published in the fourth quarter of 2025. Integrating measures directly into CBAM Regulation or creating secondary legislation to assist LDCs (or a broader group of developing countries) at the outset of full implementation in 2026 proves not foreseen, leaving NDICI and related programs the only way of supporting LDCs.

Table 4: Legal framework: Gradual implementation of CBAM



Source: European Commission

Table 5: The Carbon Border Adjustment Mechanism: Legal Workplan 2024-25

Source: European Commission

Conclusion

By spotlighting climate change as one of the most pressing issues of contemporary international relations, the thesis encourages scholarly contemplation and invites policy reflection on aligning climate action with the recognized principles of justice. Within the context of climate justice, it contends that revenue recycling – redistributing carbon pricing revenues towards climate mitigation and adaptation efforts in developing countries – represents an arrangement that addresses unequal impacts of climate policies and supports a fair yet effective energy transition.

> Negative inequality impacts of climate policies can be mitigated (and possibly even prevented), but this requires conscious effort, careful planning and multi-stakeholder engagement. Best results can be achieved when potential inequality impacts are taken into consideration in all stages of policy making, including policy planning, development and implementation. (Markkanen and Anger-Kraavi 2019)

Through an in-depth case study of the European Union Carbon Border Adjustment Mechanism (EU CBAM), the thesis delves into the complex interplay between trade and climate as well as between the EU and third countries. In line with the previous research, which confirms the worldwide importance of carbon pricing mechanisms while highlighting the need to implement them with climate justice principles, the thesis focuses on CBAM as a historically first carbon border tariff. While assessing a moving target in the transition phase with full implementation only in 2026 proves to be challenging, especially in terms of estimating its impact on exporting countries, it also provides an opportunity to delve into engaging and thought-provoking research.

The analysis is based on the common premise that CBAM would gradually expand. To align with the pace of the associated increased impact, the study suggests that relevant measures are incorporated to consider different starting points of respective countries. It is particularly important with regard to the vulnerabilities of developing and least-developed countries, as

determined by their eligibility for ODA. Given that fact, the manner in which CBAM's revenue is distributed is a crucial macroeconomic issue influencing the economic performances of affected countries, the research suggests that integrating revenue recycling into CBAM would enhance the policy's distributive justice by creating a compensation arrangement aiming to decarbonise the developing economies more symmetrically compared to the EU and other developed regions. The findings on uneven exposure and possible harm to certain developing nations lend weight to the argument, especially considering the fact that their historical contribution to climate change and, hence, their obligation to bear its costs is significantly lower. As highlighted, distributive justice, which guarantees the fair distribution of both assigned burdens as well as produced benefits, emerges as a critical element to successful energy transition on a global scale.

Although it has been argued that the profits would be directed toward climate initiatives in the exporting countries if CBAM's priority was lowering emissions, recycling of the revenue was ultimately rejected. Still, CBAM promises and legally incorporates into the European legislation the commitment of the EU to "provide technical assistance for those purposes to developing countries and to least developed countries as identified by the United Nations (LDCs)" in order to support their CBAM execution as well as respective decarbonisation pathways (EUR-Lex 2023, 62). However, as disclaimed in the final part of the Analysis, revenue recycling does not seem to make the case for further incorporation into CBAM according to current projections, and the assistance is not planned to be directly funded through the CBAM-generated revenue allocated to the EU budget. It appears that the manner and amount of this support is yet to be determined, leaving the responsibility to other programs that support climate action and development aid, including NDICI.

Instead of criticizing the policy, the research acknowledges its significance and presents different perspectives based on various external and internal sources. It is essential to recognize the EU's climate change efforts, its assistance to developing countries in combating the issue, and the overall objective of CBAM. Yet, it is also essential to further consider the possibility of employing the policy's revenue as a direct additional mechanism for these purposes. Through desk research involving textual analysis of the Regulation, participant observation at the European Climate Summit and qualitative interviews with the EU policymakers, the study provides unique findings demonstrating the complexity, ambiguity, and, most importantly, uncertainty surrounding CBAM. With the goal of enhancing climate policymaking, my findings suggest paying closer attention to the intersection of the implementation of carbon pricing mechanisms and their alignment with climate justice principles, thereby ensuring truly a "just and inclusive transition for all".

Appendices

Interview Guide

General Questions

1. What are the primary challenges in planning and executing the CBAM, and how do they affect its functionality and potential expansion of its scope?
2. What potential outcomes, both expected and unexpected, can arise from the implementation of the CBAM?
3. What mechanisms are in place to manage the revenue generated from the CBAM, and how will it be allocated?
4. How might the CBAM influence countries both within the EU and those outside its borders, for instance, in terms of trade relations, industrial competitiveness, and climate action?
5. What strategies and policies have been devised to mitigate any negative impacts that could stem from the CBAM?

Sub-questions

1. What steps has the EU taken to collaborate with global partners and international organizations on the planning, execution, and implementation of the CBAM?
2. In what ways does the CBAM reflect the EU's commitment to ensuring a "just and inclusive transition"?
3. What specific measures has the EU taken to ensure climate policies, particularly CBAM, do not exacerbate global economic disparities?
4. What existing programs or initiatives are in place to provide support for third countries that could be negatively impacted or face challenges due to the CBAM implementation? What additional proposals could be suggested to assist them?
5. What lessons has the EU learned from other environmental initiatives that could help improve the effectiveness and scalability of the CBAM over time?

Description of Interviewees

No. of Interview	Workplace	Position
I1	European Commission (DG TAXUD)	Head of Unit
I2	European Commission (DG TAXUD)	Policy Officer
I3	Council of the EU (ECOFIN)	Minister of Finance representing a Member State
I4	European Parliament (Left Group)	Political Advisor on the CBAM
I5	Ministry of Environment of a Member State	CBAM Policy Specialist
I6	European Commission (DG TAXUD)	Policy Officer
I7	European Parliament (S&D)	Member of the European Parliament covering ITRE
I8	European Parliament (Renew)	Member of the European Parliament covering ECON
I9	European External Action Service	Climate Policy Officer

OECD Development Assistance Committee List of ODA Recipients

DAC List of ODA Recipients | Effective for reporting on 2024 and 2025 flows

LEAST DEVELOPED COUNTRIES	LOW INCOME COUNTRIES WHICH ARE NOT LDCs (per capita GNI <= $1 135 in 2022)	LOWER MIDDLE INCOME COUNTRIES AND TERRITORIES WHICH ARE NOT LDCs (per capita GNI $1 136 - $4 465 in 2022)	UPPER MIDDLE INCOME COUNTRIES AND TERRITORIES WHICH ARE NOT LDCs (per capita GNI $4 466 - $13 845 in 2022)
Afghanistan (L)	Democratic People's Republic of Korea	Algeria	Albania
Angola (LM)	Syrian Arab Republic	Bhutan	Argentina
Bangladesh (LM)		Bolivia	Armenia
Benin (LM)		Cabo Verde	Azerbaijan
Burkina Faso (L)		Cameroon	Belarus
Burundi (L)		Congo	Belize
Cambodia (LM)		Côte d'Ivoire	Bosnia and Herzegovina
Central African Republic (L)		Egypt	Botswana
Chad (L)		Eswatini	Brazil
Comoros (LM)		Ghana	China (People's Republic of)
Democratic Republic of the Congo (L)		Honduras	Colombia
Djibouti (LM)		India	Costa Rica
Eritrea (L)		Iran	Cuba
Ethiopia (L)		Jordan	Dominica
Gambia (L)		Kenya	Dominican Republic
Guinea (LM)		Kyrgyzstan	Ecuador
Guinea-Bissau (L)		Lebanon	El Salvador
Haiti (LM)		Micronesia	Equatorial Guinea
Kiribati (LM)		Mongolia	Fiji
Lao People's Democratic Republic (LM)		Morocco	Gabon
Lesotho (LM)		Nicaragua	Georgia
Liberia (L)		Nigeria	Grenada
Madagascar (L)		Pakistan	Guatemala
Malawi (L)		Papua New Guinea	Guyana[2] (H)
Mali (L)		Philippines	Indonesia
Mauritania (LM)		Samoa	Iraq
Mozambique (L)		Sri Lanka	Jamaica
Myanmar (LM)		Tajikistan	Kazakhstan
Nepal (LM)		Tokelau*	Kosovo
Niger (L)		Tunisia	Libya
Rwanda (L)		Ukraine	Malaysia
Sao Tome and Principe[1] (LM)		Uzbekistan	Maldives
Senegal (LM)		Vanuatu	Marshall Islands
Sierra Leone (L)		Viet Nam	Mauritius
Solomon Islands[1] (LM)		Zimbabwe	Mexico
Somalia (L)			Moldova
South Sudan (L)			Montenegro
Sudan (L)			Montserrat[3] (H)
Tanzania (LM)			Namibia
Timor-Leste (LM)			Nauru[4] (H)
Togo (L)			Niue*
Tuvalu (UM)			North Macedonia
Uganda (L)			Palau
Yemen (L)			Panama[2] (H)
Zambia (LM)			Paraguay
			Peru
			Saint Helena*
			Saint Lucia
			Saint Vincent and the Grenadines
			Serbia
			South Africa
			Suriname
			Thailand
			Tonga
			Türkiye
			Turkmenistan
			Venezuela[5]
			Wallis and Futuna*
			West Bank and Gaza Strip

(1) General Assembly resolution A/73/L.40/Rev.1 adopted on 13 December 2018 decided that São Tomé and Príncipe and Solomon Islands will graduate six years after the adoption of the resolution, i.e., on 13 December 2024. Angola's previously scheduled graduation from the LDC category was deferred in 2023. At the UN Committee for Development Policy's 2024 Triennial Review, Angola no longer met the graduation criteria and therefore will remain an LDC. The List will therefore be revised for 2025 and 2026 ODA reporting if it is confirmed that São Tomé and Príncipe and Solomon Islands moved from the LDC category, and they will appear against their respective World Bank groupings on the List.

(2) Guyana and Panama exceeded the high-income threshold in 2022. In accordance with the DAC rules for revision of this List. If they remain a high-income country until 2025, they will be proposed for graduation from the List in the 2026 review.

(3) The DAC agreed to defer the decision to graduate Montserrat until October 2025, based on reliable GNI per capita data to be submitted by the latest on 1 July 2025. If the data show that Montserrat remained a high-income country, it will be proposed for graduation for 2026.

(4) The DAC approved the graduation of Nauru from the DAC List of ODA Recipients but agreed to defer the date of effect of its graduation until 1 January 2026. In January 2026, the DAC will update the DAC List of ODA Recipients to reflect Nauru's graduation.

(5) Venezuela has been temporarily unclassified by the World Bank in July 2021 pending release of revised national accounts statistics. Estimated placement on the List.

*Countries and territories not classified in World Bank income groups. Estimated placement on the List.

Note: L, LM, UM and H shown after country names refer to the latest World Bank income classifications of: LDCs and any high-income countries that have not yet met the criteria for graduation. For the World Bank's current 2024 fiscal year, low income (L) economies are defined as those with a GNI per capita, calculated using the World Bank Atlas method, of USD 1 135 or less in 2022; lower middle-income (LM) economies are those with a GNI per capita between USD 1 136 and USD 4 465; upper middle-income (UM) economies are those with a GNI per capita between USD 4 466 and USD 13 845; high income (H) economies are those with a GNI per capita of more than USD 13 845.

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DAC List of ODA Recipients | Effective for reporting on 2024 and 2025 flows | oe.cd/dac-list-oda-recipients

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