

CHAPTER I

INTRODUCTION

1.1 Background

The steel industry is one of the key pillars of global economic development, playing a central role in the infrastructure, construction, and manufacturing sectors. However, despite its contributions to economic growth, this industry is also one of the largest sources of carbon emissions worldwide. The steel production process, which involves reducing iron ore using fossil fuels such as coke, results in the release of large amounts of carbon dioxide. It is estimated that these emissions will continue to grow by 25-30% by 2050, accounting for approximately 7% of all anthropogenic CO₂ emissions¹. This situation has sparked global concerns about the sustainability of the steel industry, especially amid efforts by various countries to achieve *Net-Zero Emission* targets in accordance with *the Paris Agreement*. *The Paris Agreement* is an international agreement aimed at establishing a global framework for addressing climate change². As one of the world's largest economic regions, the European Commission adopted *the European Green Deal* (EGD) in December 2019, a comprehensive and long-term strategy marking a shift in Europe's policy priorities. The EGD aims to transform the European Union into a climate-neutral economy by 2050, in line with its commitments under the Paris Agreement, and to reduce net greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels³.

However, the implementation of the EGD is perceived by developing countries as a discriminatory decision because it imposes unfair costs. This creates a paradox where the EU's internal commitment to justice may not be fully reflected in its external trade relations, raising questions about the fairness of the global climate burden-sharing. Indirectly, the tension between Europe's environmental

¹ Lauri Holappa, "A General Vision for Reduction of Energy Consumption and CO₂ Emissions from the Steel Industry," *Metals* 10, no. 9 (2020):2 .

² Daniel Bodansky, "The Legal Character of the Paris Agreement," *Review of European, Comparative and International Environmental Law* 25, no. 2 (2016): 142.

³ Luca Montanarella and Panos Panagos, "The Relevance of Sustainable Soil Management within the European Green Deal," *Land Use Policy* 100 (2021): 104950,

policy ambitions and its international trade policy inadvertently exacerbates existing inequalities or creates new trade frictions if the principle of a "just transition" is not extended to its trading partners, particularly developing countries. One of the policies that is part of the EGD to address the risk of "carbon leakage", which is the relocation of carbon-intensive industries to countries with less stringent climate policies, and to ensure *a level playing field* for EU producers, the EU has introduced the Carbon Border Adjustment Mechanism (CBAM). This policy aims to reduce carbon emissions in the heavy industry sector, including steel, by imposing tariffs commensurate with the carbon emitted during production on imports of products from countries with lower carbon emission standards than the EU⁴. Through this policy, the EU seeks to encourage producers in trading partner countries to improve the sustainability standards of their products to meet EU market requirements.

CBAM will take effect on May 17, 2023, and enter a transition phase on October 1, 2023. During this transition phase (until January 1, 2026), importers of CBAM-covered goods are required to report embedded carbon emissions (direct and indirect) without needing to purchase CBAM certificates. These quarterly reports may use the EU reporting methodology or an equivalent method. However, starting January 1, 2025, only the EU reporting methodology will be accepted, and a new voluntary portal for producers in third countries has been launched to facilitate the reporting mechanism. CBAM will be fully implemented starting January 1, 2026, at which point importers must purchase certificates for the emissions associated with imported goods⁵. The initial scope of CBAM covers carbon-intensive commodities such as cement, iron and steel, aluminum, fertilizers, hydrogen, and electricity. The iron and steel sector is one of the main industrial sectors affected, accounting for 69% of compliance reports received so far⁶.

⁴ Jiarui Zhong and Jiansuo and Pei, "Carbon Border Adjustment Mechanism: A Systematic Literature Review of the Latest Developments," *Climate Policy* 24, no. 2 (February 7, 2024): 228 .

⁵ "'One Year On' - Implementation of the European Union's Carbon Border Adjustment Mechanism – January 2025 | New Zealand Ministry of Foreign Affairs and Trade," accessed June 4, 2025,

⁶ Lijun Ren et al., "Quantitative Assessment of the Carbon Border Adjustment Mechanism: Impacts on China–EU Trade and Provincial-Level Vulnerabilities," *Sustainability (Switzerland)* 17, no. 4 (2025):3 .

On the other hand, Indonesia, as one of the world's steel-producing countries, faces major challenges in maintaining the sustainability of its industry. The national steel industry makes a significant contribution to domestic economic development, particularly in supporting the government's strategic infrastructure projects. The steel industry plays a vital role in Indonesia's economic development and growth, driven by strong demand from key sectors including construction, automotive, and energy. With its capacity, Indonesia has around 124 steel companies, most of which are small-scale and concentrated on the island of Java. Krakatau Steel, as a state-owned company, is the largest player with a crude steel capacity of 5.9 million metric tons, contributing more than half of the national crude steel capacity⁷. Indonesia's crude steel production has increased rapidly, from 4.75 million tons in 2016 to around 17 million tons in 2024⁸.

In the construction sector, huge infrastructure projects such as the development of the new capital city of Nusantara are the largest consumers of steel, accounting for 78% of total national steel consumption⁹. Over the past five years, national steel industry consumption averaged 15.62 million tons per year, with production averaging 12.46 million tons per year. Meanwhile, on the export front, the iron and steel industry has also seen a steady upward trend, rising from USD 7.9 billion in 2019 to USD 28.5 billion in 2022¹⁰. However, the adoption rate of environmentally friendly technology in this sector remains relatively low. In 2024, Indonesia's total dependence on fossil fuels in the iron industry is expected to reach 80%. This makes Indonesian steel products vulnerable to failing to meet the emission standards set by the European Union through the CBAM policy. On the other hand, considering that the European Union is one of the main export destinations for the national steel industry, in 2022, the EU was the third-largest export destination in terms of volume and the fifth-largest in terms of value.

⁷ "Indonesia's Infrastructure Boom Drives Explosive Growth in Steel Demand—Analysis of the Current State of Indonesia's Steel Industry | SMM," accessed June 4, 2025.

⁸ "Tighter Trade Defenses Shift EU Steel Importers' Focus," accessed June 4, 2025.

⁹ Ibid.

¹⁰ "Making a Significant Contribution to Economic Growth, Coordinating Minister Airlangga Urges Steel and Iron Industries to Adopt Sustainable Principles - Ministry of Coordinating Economic Affairs of the Republic of Indonesia," accessed May 11, 2025,

On the other hand, exports to the EU have shown significant growth in both volume and value in recent years, with a *Compound Annual Growth Rate* (CAGR) of 30% and 34%, and export volume to the EU remaining relatively high at 628,000 tons¹¹. Therefore, the sustainability of Indonesia's steel industry now stands at a crossroads between the need to enhance global competitiveness and the demands for. Given the urgent global context of climate change and the EU's aggressive policy response through *the European Green Deal* and CBAM, Indonesia's steel industry faces significant challenges and opportunities. Indonesia's steel industry, which is a pillar of the domestic economy with rapid growth and increasing exports to the EU, remains heavily reliant on carbon-intensive production technologies. The gap between Indonesia's steel emission intensity and the EU's increasingly stringent standards, coupled with the additional costs imposed by CBAM, threatens Indonesia's export competitiveness and demands substantial decarbonization efforts. Therefore, this study aims to analyze in depth: How does the EU CBAM affect the Indonesian steel industry?

1.2 Research Questions

Based on the above discussion, the main issues to be addressed in this study are: How does the European CBAM policy impact Indonesia's steel industry?

1.3 Research Objectives

The objectives of this study are to understand in depth the impact of the EU CBAM policy on the Indonesian steel industry.

1.4 Research Benefits

This research is expected to provide benefits and contributions both theoretically and practically:

¹¹ "Impact of CBAM on Indonesia's Steel Product Exports | IISIA The Indonesian Iron & Steel Industry Association," accessed May 11, 2025,

1.4.1. Theoretical Benefits

This research is expected to become a new reference in the development of discourse on international relations, especially in the field of international political economy.

1.4.2. Practical Benefits

This research is expected to provide insights into the discussion of the European CBAM policy and information related to the development of the steel industry in Indonesia.

1.5 Literature Review

1.5.1 Previous Research

Several other studies serve as references in this study as well as comparisons and frameworks, including the following

In the book entitled *The New Regionalism Approach (2005)*, Björn Hettne and Fredrik Söderbaum explain the concept of *new regionalism* as a form of evolution from regional cooperation that not only focuses on internal integration but is also directed at shaping the position of the region in the global order, or what they call *the world order phenomenon*¹². In this context, the European Union is understood not merely as a regional economic and political integrative entity, but also as an international actor with institutional and normative capacity to influence global structures. Institutions such as the European Commission and the European Parliament enable the EU to produce cross-border policies, including on global environmental issues such as CBAM. These policies demonstrate how the EU projects its regulatory influence beyond its borders by setting carbon standards that its trading partners must comply with. Unlike Hettne and Söderbaum's study, which emphasizes institutional dynamics and regional orientation toward the global order at the macro level, this study focuses on how the concrete influence of EU regional policies, in this case CBAM, creates pressure on developing countries such as

¹² Björn Hettne, "Beyond the 'new' Regionalism," *New Political Economy* 10, no. 4 (2005): 543–571.

Indonesia in specific sectors, namely the steel industry. Thus, this study contributes to expanding the application of *new regionalism* from the conceptual and institutional levels to the sectoral policy level and its relational impacts on non-regional actors. The analytical benefits of this approach are to position the EU as a source of regulatory power within the global trading system.

Previous research written by Xiaorui Peng, entitled "***The Impact of EU Carbon Border Adjustment Mechanism: Perspective from Developed and Developing Countries***" explains that there are differences between developed and developing countries in dealing with the European Carbon Border Adjustment Mechanism policy. It is mentioned that developed countries tend to be more resilient because they have similar policy mechanisms. In contrast, developing countries are more vulnerable to this policy mechanism due to the slow development of environmentally friendly technology, which will significantly impact international trade, particularly in the countries that export high-carbon goods¹³. This study has strong relevance to the research above, particularly from the perspective of actors. Indonesia is a developing country that lacks sufficient capacity in the development of environmentally friendly technology, making it vulnerable to the EU's CBAM policy. However, this research differs from the aforementioned study in that it does not specify which developing countries are the objects of the study and which production sectors will be the focus of the study, as will be examined by the author in assessing the impact of the EU CBAM on the Indonesian steel industry. The aforementioned study will serve as a reference for this research, particularly in terms of the potential impacts on developing countries in responding to the CBAM policy.

The next reference, entitled "***A European Union Carbon Border Adjustment Mechanism: Implications for developing countries***" published by the *United Nations Conference on Trade and Development* (2021), provides an overview that CBAM, which aims to reduce carbon leakage and encourage low-carbon production, has the potential to suppress exports from developing countries

¹³ Xiaorui Peng, "The Impact of EU Carbon Border Adjustment Mechanism: Perspective from Developed and Developing Countries," *BCP Business & Management* 35 (2022): 338-339 .

in carbon-intensive sectors such as steel and cement. This study also identifies that while CBAM could reduce carbon leakage by up to half, the mechanism disproportionately impacts countries with less carbon-efficient production technologies¹⁴. In the context of Indonesia, which is a major steel exporter to the European Union, this policy poses a significant challenge due to the high carbon intensity of its national steel production processes compared to developed countries. Research such as that conducted by Branger and Quirion (2014) titled *"Would border carbon adjustments prevent carbon leakage and heavy industry competitiveness losses? Insights from a meta-analysis of recent economic studies"* emphasizes that the steel sector is often one of the most affected by the implementation of CBAM, with a decline in global competitiveness due to the high carbon costs imposed¹⁵. From a relevance perspective, previous research provides the foundation for this article to present empirical evidence that CBAM can affect the export capacity of Indonesia's steel industry. This article also fills a research gap by focusing specifically on the policy implications for the competitiveness of Indonesia's steel industry in the EU market.

On the other hand, research by Magacho (2023) entitled *"Macroeconomic exposure of developing economies to low-carbon transition"* analyzes the impact of the low-carbon transition on the macroeconomy of developing countries. This study shows that countries with high dependence on high-emission industries (*sunset industries*) face significant risks to export revenues, tax revenues, and social welfare. Through a multi-regional input-output matrix analysis, this study identifies the iron and steel industry as part of the *sunset industries* sector highly impacted by policies such as CBAM. Additionally, the study highlights that the low-carbon transition requires policies tailored to local contexts, particularly for developing countries that often have limited structural adaptation capacity¹⁶. The findings of

¹⁴ Isabelle Durant et al., "A European Union Carbon Border Adjustment Mechanism: Implications for Developing Countries," *United Nations Conference on Trade and Development*, published July (2021) : 11

¹⁵ Frédéric Branger and Philippe Quirion, "Would Border Carbon Adjustments Prevent Carbon Leakage and Heavy Industry Competitiveness Losses? Insights from a Meta-Analysis of Recent Economic Studies," *Ecological Economics* 99 (2014): 29–39,

¹⁶ Guilherme Magacho et al., "Macroeconomic Exposure of Developing Economies to Low-Carbon Transition," *World Development* 167 (2023): 106231,

this study are important for understanding Indonesia's exposure to the EU's CBAM policy, particularly in the context of the steel industry, which plays a significant role in the structure of exports and tax revenues. This study provides a foundational framework for researchers to analyze risk assessments and mitigation strategies for Indonesia in addressing the impacts of the CBAM policy on the steel sector.

The study conducted by Kim et al. (2023) in their research titled *"An Impact Assessment of the European Carbon Border Adjustment Mechanism on the Korean Economy: A CGE Approach"* provides important insights into the economic impact of CBAM on major exporting countries, particularly South Korea. The study's findings indicate that the implementation of CBAM will cause significant economic contraction in certain sectors, particularly the iron and steel production sector, which is projected to experience a decline in export value of approximately USD 68 million. This indicates that carbon-intensive industries dependent on exports to the EU will face significant pressure¹⁷. In addition to the steel sector, export declines are also predicted in the electronics and energy sectors. This indicates that the impact of CBAM extends beyond heavy manufacturing industries to the energy and services sectors, creating a ripple effect in the national economy. From a policy perspective, the study emphasizes the importance of strategic planning and policy adaptation by national policymakers. Exporting countries such as South Korea and, implicitly, Indonesia need to consider the interaction between environmental regulations and global trade dynamics in order to respond effectively to CBAM.

Furthermore, this study suggests the need for data-driven decision-making and a comprehensive understanding of global environmental policies. Industry players and policymakers are required to adapt to the new regulatory landscape, including adopting green technologies and diversifying export markets. In the context of Indonesia, particularly the steel industry, which is one of the main carbon-intensive sectors, the findings of this study are highly relevant. Although there has been no in-depth study on the impact of CBAM on Indonesia's steel

¹⁷ Kitetu Geoffrey Musyoki and Jong-Hwan Ko, "An Impact Assessment of the European Carbon Border Adjustment Mechanism (CBAM) on the Korean Economy: A CGE Approach," *International Academy of Global Business and Trade* 20 (February 24, 2024): 163–182.

industry, parallels with the case of South Korea indicate the potential risk of a decline in the competitiveness of Indonesia's steel exports to the EU market if significant decarbonization efforts are not made. Therefore, this study aims to address this gap by examining the potential impact of CBAM on Indonesia's steel sector, both from an economic and industrial policy perspective.

Furthermore, a study titled *"Assessing Potential Economic Impacts of the EU CBAM on its Major Trading Partners"* by Seung-Hwan Yoon in 2022 aims to assess the potential economic impact of the European Union's *Carbon Border Adjustment Mechanism* (CBAM) policy on its major trading partners. Special focus is given to South Korea as one of the major exporters of carbon-intensive products to the EU. The CBAM policy emerged as a response to the growing global commitment to climate change mitigation and the need to prevent *carbon leakage*, which is the practice of relocating production to countries with more lenient climate regulations¹⁸. This study uses a *Computable General Equilibrium* (CGE) model based on GTAP (Global Trade Analysis Project) version 10A data. This approach enables researchers to simulate the economic impacts of the CBAM policy across various sectors and regions, based on macroeconomic data from 2015 to 2020. The study evaluates various tariff scenarios based on the carbon emissions contained in imported products.

The results indicate that while the European Union is projected to experience a consumer welfare increase of USD 12.1 billion, most major trading partners will face significant declines. China, Russia, and India are estimated to suffer welfare losses of USD 10.9 billion, USD 7.1 billion, and USD 4.2 billion, respectively. For South Korea, the steel industry is the most vulnerable sector, with projected export declines of 0.99% to the EU, equivalent to losses of around 310 million euros or USD 360 million. The implications of these findings are significant, particularly for countries with export structures dependent on carbon-intensive sectors.

¹⁸ Seung-Hwan Yoon, "Assessing Potential Economic Impacts of the EU CBAM on Its Major Trading Partners," *Korea International Trade Research Institute* 18 (February 28, 2022): 391–411.

This study emphasizes the need to adopt low-carbon technologies and transition strategies toward a green economy to maintain competitiveness in a global market increasingly bound by stringent environmental standards. Additionally, the study's findings encourage policymakers to respond proactively to changes in international climate regulations. As such, this research provides important insights into how extraterritorial environmental policies like CBAM can influence international trade dynamics and the economic structures of both developing and developed nations. This study also serves as a useful starting point for further analysis regarding the potential impacts on Indonesia's steel industry.

The subsequent study, *"Impact of CBAM on Carbon Emission Reduction in Global Steel Foreign Trade: projections based on the embodied carbon emission intensity of major countries"* in 2024, will examine in depth the impact of the Carbon Border Adjustment Mechanism (CBAM) on carbon emission reductions in international steel trade. Using a *multi-regional input-output model*, this study analyzes the carbon emission intensity in steel trade from major producer countries. This approach provides comprehensive projections of the impact of CBAM on carbon emissions during the period from 2026 to 2034. The main findings of this study indicate that the implementation of CBAM has the potential to reduce carbon emissions contained in steel exports to the European Union by 25.9 million tons and globally by 625.9 million tons. These figures represent reductions of 31% and 21%, respectively, compared to a scenario without CBAM. These findings reinforce the argument that CBAM is not only a trade instrument but also an effective environmental policy in reducing global carbon emissions¹⁹.

In addition to its impact on emissions, the study also highlights the potential of CBAM in driving technological transformation in steel-producing countries. High carbon tariffs are expected to encourage investment in cleaner steel production technologies, thereby enhancing competitiveness while supporting the transition toward a low-carbon economy. As part of its policy recommendations, the authors urge steel-producing countries to immediately adopt mitigation strategies, including

¹⁹ Wei Li et al., "Impact of CBAM on Carbon Emission Reduction in Global Steel Foreign Trade: Projections Based on the Embodied Carbon Emission Intensity of Major Countries," *Energy Sources, Part B: Economics, Planning, and Policy* 19, no. 1 (December 31, 2024): 2360443.

the development of low-emission technologies and industrial policy adjustments, in order to survive and compete in a global trade landscape increasingly influenced by climate regulations. Thus, this study makes an important contribution to strengthening the narrative that CBAM not only impacts trade flows but also creates systemic incentives for structural reforms in highly carbon-intensive industries such as steel. For countries like Indonesia, which rely heavily on steel exports and face decarbonization challenges, these findings provide an important foundation for developing responsive and transformative policies.

1.5.2 Conceptual Framework

In analyzing the impact of the Carbon Border Adjustment Mechanism (CBAM) implemented by the European Union on Indonesia's steel industry, this study employs three key concepts in International Relations: *International Organization*, *Soft Power*, and *policy adjustment*.

International Organization

International organizations can be formally defined as entities formed voluntarily by more than one state or non-state entity, based on shared principles, with the primary objective of promoting peace and cooperation in international relations. According to the International Law Commission, an international organization is established through an agreement or instrument governed by international law and possesses its own characteristics of international law. Quincy Wright further explains International Organizations as the art of creating and regulating general organizations at the international, regional, and subregional levels, consisting of independent states or non-state actors, to facilitate cooperation toward common goals²⁰.

The main elements of an international organization include a permanent headquarters, a defined membership (founders and subsequent members), clear objectives, main organs (e.g., a plenary body for policy-making, an executive body for implementation, an administrative secretariat), established decision-making

²⁰ Quincy Wright, "International Organization and Peace," *Western Political Quarterly* 8, no. 2 (June 1, 1955): 149–165.

processes (e.g., voting systems), and mechanisms for managing membership (e.g., procedures for withdrawal or amendment). International organizations play an important role in various political, economic, and social fields, often serving as platforms for cooperation and standard setting. The main distinction in this context is between Intergovernmental Organizations (IGOs), which consist of sovereign states (e.g., the United Nations, the World Health Organization, NATO), and International Non-Governmental Organizations (INGOs or NGOs), which consist of individuals or non-state actors. The European Union falls under the category of IGOs because it has a formal institutional structure relevant to the characteristics of international organizations.

It can be concluded that the European Union (EU) is not just a conventional regional economic bloc, but a sophisticated international actor with significant institutional and normative capacity and the ability to influence global structures. This is also relevant to the concept of "*New Regionalism*" by Björn Hettne and Fredrik Söderbaum. This approach highlights how regional cooperation evolves beyond internal integration to shape a region's position within the broader "*world order phenomenon*"²¹. In the context of this research, the European Union includes bodies such as the European Commission and the European Parliament, empowering them to formulate and implement policies with profound cross-border impacts. This institutional strength enables the European Union to project its regulatory influence beyond its borders, setting standards that affect its trading partners. CBAM is a prime example of how the EU leverages its institutional capacity to address global challenges. CBAM is seen as the EU's instrument for setting a fair price on carbon emissions contained in goods imported into the EU, thereby encouraging cleaner industrial production in non-EU countries and ensuring a level playing field for EU producers.

By operationalizing the EU as an international organization, this study can accurately analyze who the EU is as a distinct type of international actor that exerts influence and how its unique institutional nature and regulatory capabilities enable

²¹ Björn and Söderbaum Hettne Fredrik, "The New Regionalism Approach," *Politeia* 17, no. 3 (1998): 6–21.

the creation and enforcement of policies such as CBAM, which have significant external impacts on trading partners such as Indonesia. This approach frames the EU not merely as a collection of states but as a powerful and integrated regulatory actor within the global governance system.

Soft Power

Joseph Nye Jr. defined the term "*Soft Power*" in the 1980s, defining it as the ability of a country to influence other countries to want what it wants, not through coercive pressure, such as military force or economic sanctions²² "*Hard Power*." *Soft Power* operates through attraction and persuasion, by projecting a nation's values, ideals, and culture across national borders to foster goodwill and strengthen partnerships. Its goal is to shape others' preferences so that they desire the same things because they share similar worldviews, perspectives, or cultures within this context of research *Soft Power* is manifesting by the three main instruments are, attractiveness, normative power, and international legitimacy. CBAM embodies the principles of *Soft Power* by seeking to influence the behavior of non-EU countries, including Indonesia, through market-based incentives rather than direct coercion. Its primary objective is to promote cleaner industrial production globally and reduce carbon emissions by holding non-EU producers accountable for greenhouse gas emissions released during the production of goods sold in the EU.

Unlike *Hard Power*, which involves military force or economic sanctions, CBAM does not directly impose penalties or restrictions on the sovereignty or economy of a country outside of its trade relations with the European Union. The EU does not *force* Indonesia to adjust its industrial policies through threats or military action. Instead, CBAM creates regulatory and economic pressure through market mechanisms. By setting standards for market access, the EU influences behavior by making it economically advantageous for exporting countries to align themselves with EU environmental values and production standards. This is a form of influence as defined by Coulombis and Wolfe, where an actor influences the

²² Joseph S Nye, *Soft Power: The Means to Success in World Politics* (Public affairs, 2004).

actions of another actor without violence, through regulatory or persuasive means²³. The choice for Indonesian steel producers is to adapt to EU standards to maintain market access or face increased costs, which is vastly different from being subject to an embargo or military intervention. This subtle yet powerful form of influence is a characteristic of *Soft Power*, which leverages attraction (the EU market) and persuasion (economic incentives for decarbonization). Operationalizing *Soft Power* enables research to analyze *the mechanisms* through which CBAM impacts Indonesia. On the other hand, it helps explain the type of influence and impact that provide (persuasive, market-based, non-coercive) and how these policies manifest in observable changes within Indonesia's steel industry within its broader policy landscape.

Policy Adjustment

The concept of policy adjustment was first comprehensively introduced by Robert O. Keohane and Helen V. Milner in their work *Internationalization and Domestic Politics* (1996). In their view, policy adjustment describes how a country adjusts the direction of its domestic policy in response to changes and pressures emanating from the international environment. This process is part of the dynamics of the relationship between international structures and domestic decisions, where national policies cannot be completely detached from the influence of interconnected global systems²⁴.

Keohane and Milner argue that external pressures in the form of international policies, economic regulations, and global norms will force countries to undertake internal adaptation processes to remain competitive and relevant. This adaptation can occur through two main stages, namely actual adjustment, when the external impact is real and measurable, and anticipatory adjustment, when the state begins to change its policies to anticipate impacts that have not yet fully occurred. In the context of this study, the concept of policy adjustment is used to analyze how

²³ Theodore A Coulombis and James Hastings Wolfe, *Introduction to International Relations: Power and Justice* (Pearson, 1990): 86 .

²⁴ R. O. Keohane and H. D. Milner, "Internationalization and Domestic Politics," (Cambridge University Press, 1996): 28-30

Indonesia makes policy adjustments in response to external pressures from the European Union's Carbon Border Adjustment Mechanism (CBAM) policy.

Because the CBAM policy is still in the transition stage and has not been fully implemented, this study emphasizes more on the form of anticipatory adjustment that reflects the potential impact of the policy. Thus, policy adjustment in this study is operationalized as a process of policy adaptation that arises from the external influence of the European Union through its soft power instruments, where changes in policy direction, the formation of new regulations, and the adoption of a low-emission industrial strategy in Indonesia are understood as a form of initial response to CBAM pressure.

Hypothesis

The study hypothesized that as an influential international organization, the European Union uses the Carbon Border Adjustment Mechanism (CBAM) as a *soft power* instrument to shape preferences and encourage strategic and operational adjustments in Indonesia's efforts to decarbonize its steel industry, thereby affecting its competitiveness in the global market. This hypothesis clearly identifies the European Union as the primary actor operating as an international organization, CBAM as the specific mechanism of soft power employed, and the expected impacts on Indonesia's steel industry, including operational adjustments, decarbonization efforts, and changes in competitiveness. This provides a testable and focused statement to guide the research analysis.

1.6 Research Method

1.6.1 Research Design

This study employs a qualitative method with a descriptive approach. Qualitative methods were chosen because they allow researchers to conduct an in-depth exploration of specific phenomena through non-numeric data analysis. According to Miles and Huberman (1994), qualitative methods focus on understanding phenomena based on their context, with researchers acting as the

primary instruments in the data collection and analysis process²⁵. This study aims to comprehensively examine the impact of the European Union's Carbon Border Adjustment Mechanism (CBAM) policy on the steel industry in Indonesia, particularly in terms of sustainability and competitiveness in the international market.

1.6.2 Research Objective

The objective of this study is the Carbon Border Adjustment Mechanism (CBAM) policy implemented by the European Union and its impact on the steel industry sector in Indonesia. The focus of the study is on analyzing the impact of this policy on the sustainability of the steel industry, its adjustment to international standards, and the competitiveness of Indonesian steel products in the export market. The scope of this study is limited to the period during which the CBAM policy has been implemented gradually since 2023, with particular attention to the policy's influence on the dynamics of the steel industry up to the present situation.

1.6.3 Data Collection Techniques

The data collection technique in this study was conducted through *library research*. The data used in this study were sourced from various secondary references, such as scientific journals, books, official European Union policy reports, steel industry reports in Indonesia, and relevant publications from *international* organizations related to climate change and global trade. This literature review aims to obtain empirical and theoretical information related to the research topic, thereby providing a strong and valid foundation for analysis.

1.6.4 Data Analysis Techniques

Data analysis in this study uses a qualitative data analysis approach as described by Miles and Huberman (1994), which involves three main stages, namely data reduction, data presentation, and conclusion drawing.

²⁵ Michael Huberman and Matthew B Miles, *The Qualitative Researcher's Companion* (sage, 2002) : 67

The first stage, data reduction, is carried out by sorting, simplifying, and focusing on data relevant to the research focus²⁶. This process aims to filter information that supports in-depth analysis of the topic being studied. Next, the reduced data is presented in the form of descriptive narratives and tables to facilitate understanding and interpretation of the data by researchers. The final stage is drawing conclusions, which is done by compiling findings based on data that has been analyzed systematically, ensuring consistency and validity of the data. The entire data analysis process aims to answer the research questions posed in the study.

1.7 Structure of Discussion

In this study, the author will divide the research into four chapters, including:

CHAPTER I: INTRODUCTION

This chapter contains the research background, problem formulation, objectives, benefits, and relevant literature review. In addition, the conceptual framework used, namely the concepts of *International Organization*, *Soft Power* (Joseph Nye), and *Policy Adjustment* (Keohane & Milner), was also explained as an analytical basis in examining the influence of CBAM on the Indonesian steel industry. The methodology of descriptive qualitative research is also described to show the approach used.

CHAPTER II: OVERVIEW OF THE OBJECT OF RESEARCH

This chapter provides a contextual description of the object of the research. First, it explains the history of the birth of CBAM within the framework of *the European Green Deal* and the dynamics of its implementation. Second, it explained the capacity of the European Union as an international organization with global regulatory power that is able to project its policies outside the region. Furthermore, the global response to CBAM, especially from developing countries, was discussed. Finally, this chapter outlines the state of Indonesia's steel industry, including its

²⁶ Ibid.

development, strategic role in the national economy, as well as major challenges faced related to sustainability and high carbon emissions.

CHAPTER III: DISCUSSION

This chapter contains a key analysis of the research which is divided into three sections. First, it discusses the projection of *the European Union's soft power* through international environmental policy, emphasizing the EU's attractiveness as a *normative power* and a global regulatory instrument. Second, it outlines the impact of CBAM on the Indonesian steel industry, including changes in the preferences of domestic actors, the role of institutions in policy adjustments, and the limitations of the adoption of low-carbon technologies. This analysis uses a *policy adjustment framework* to explain the relationship between external pressures and domestic responses. Third, this research presents the perspective of Islamization of science as a normative critique, by highlighting the foundations of Islamic environmental ethics, the principles of economic justice, and conceptual alternatives that can enrich Indonesia's adaptation strategy.

CHAPTER IV: CONCLUSION

The final chapter summarizes the main findings of the study showing that CBAM exerts significant pressure on the Indonesian steel industry, as well as triggering a process of domestic policy adjustment. This chapter also contains policy recommendations aimed at improving cross-sector coordination, strengthening the decarbonization roadmap, and technological and financial support so that the national steel industry can maintain competitiveness in the European market. In addition, normative reflection based on an Islamic perspective is offered as an alternative discourse to strengthen the principle of justice in global climate governance.

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