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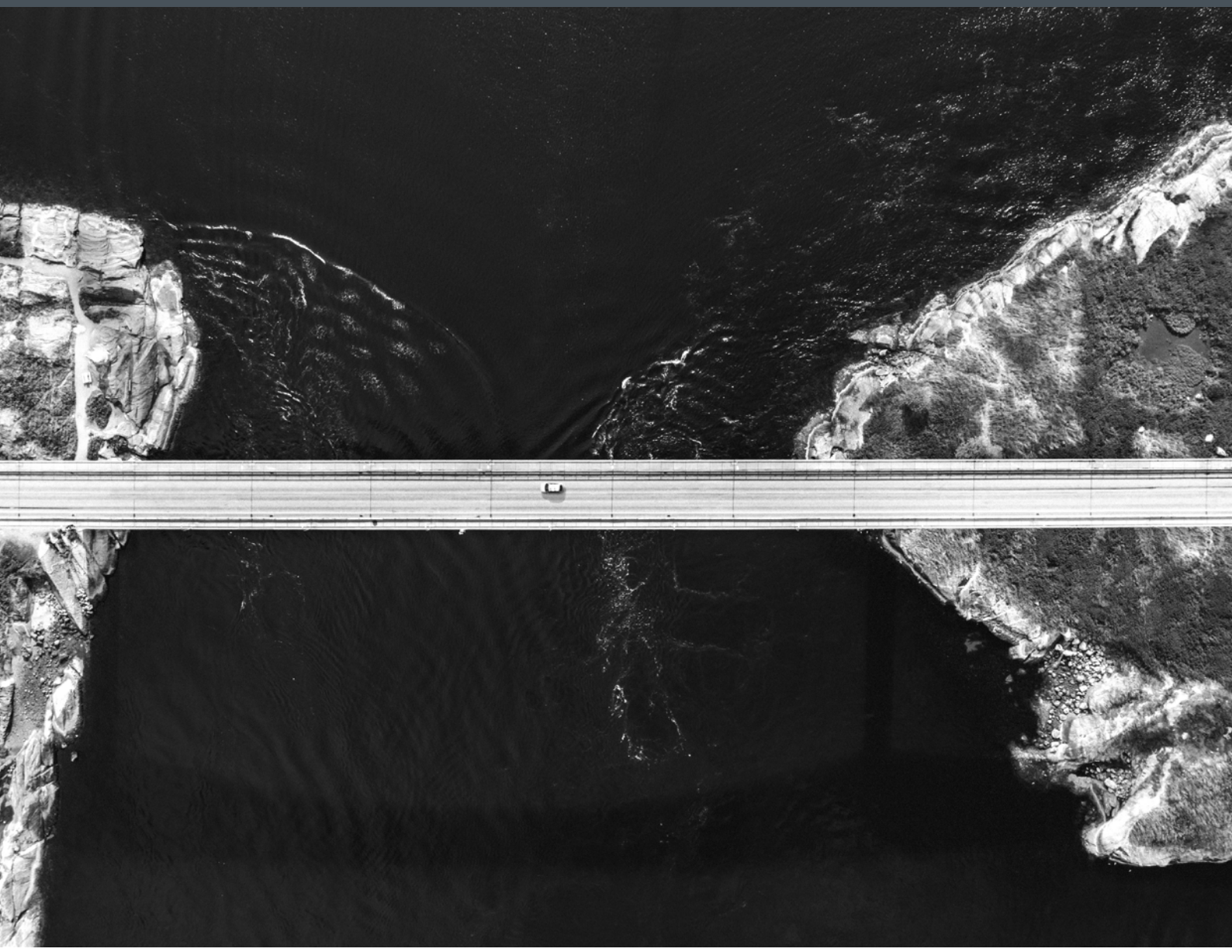

BRIDGING MECHANISMS FOR SYNERGISTIC IMPACT

Uniting the European Union's Carbon Border Adjustment Mechanism and Article 6.2 of the Paris Agreement to accelerate climate action.

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"Cooperation frameworks developed multilaterally, such as Article 6.2 of the Paris Agreement, could enhance CBAM's potential impact and foster global collaboration on climate action."

Synopsis

This paper explores the potential synergies between the European Union's Carbon Border Adjustment Mechanism (CBAM) and Article 6.2 of the Paris Agreement. As CBAM has the potential to impact global markets and challenge emerging economies, integrating it with Article 6.2 could provide a pathway to collaborative and effective global climate action. The CBAM, which aims to level the playing field for EU industries by imposing a carbon price on imports, aligns with the EU's Emissions Trading System (EU ETS) prices and is set to fully commence in 2026. This mechanism seeks to shield EU industries from non-EU industries that externalize the carbon costs of production, while encouraging non-EU countries to establish carbon pricing mechanisms in line with global agreements.

The paper details the operational aspects of CBAM and discusses the mixed international reactions and strategic adjustments various countries are considering in response. It further delves into Article 6.2 of the Paris Agreement, which introduces a cooperative mechanism allowing countries to meet their climate targets by generating and selling Internationally Transferred Mitigation Outcomes (ITMOs). These ITMOs, which facilitate both country-to-country and private-sector engagements, are crucial for driving investments towards commercial activities that meet market needs, while reducing greenhouse gas emissions globally.

Finally, the paper identifies and analyzes potential methods for integrating CBAM and Article 6.2, suggesting that this could not only streamline global decarbonization efforts, but also address equity concerns raised by the unilateral nature of CBAM. It posits that these mechanisms can enhance the global response to climate change through strategic alignment and shared goals, ultimately fostering a fairer transition to a low-carbon economy. The authors argue for urgent action and collaboration to realize the potential of these interrelated frameworks, especially as the CBAM's transitional phase progresses towards its critical implementation phase.

1. The EU's Carbon Border Adjustment Mechanism (CBAM)

In April 2023, the Council of the European Union approved the world's first CBAM following extensive discussions.[1] This policy tool is designed to level the playing field for EU companies by imposing a carbon price on imports comparable to that of the EU ETS—which has consistently exceeded €60 per tonne of CO2 equivalent (tCO2e) over the last two years and is projected to average €94/tCO2e in 2026 when the sale of CBAM Certificates begins.[2] This mechanism aims to protect EU industries from competitors in countries without similar carbon costs and encourages these countries to adopt carbon pricing mechanisms.[3]

CBAM is in a transitional phase that began in October last year and will conclude in December 2025. During this phase, sectors subject to the CBAM must start reporting their emissions to the CBAM Transitional Registry.[4] The definitive CBAM regime will take effect in January 2026, requiring the purchase of CBAM Certificates for emissions from critical sectors such as electricity production, iron and steel, aluminium, cement, fertilizers, hydrogen, and certain other products. Below, we provide a complete timeline detailing these developments.

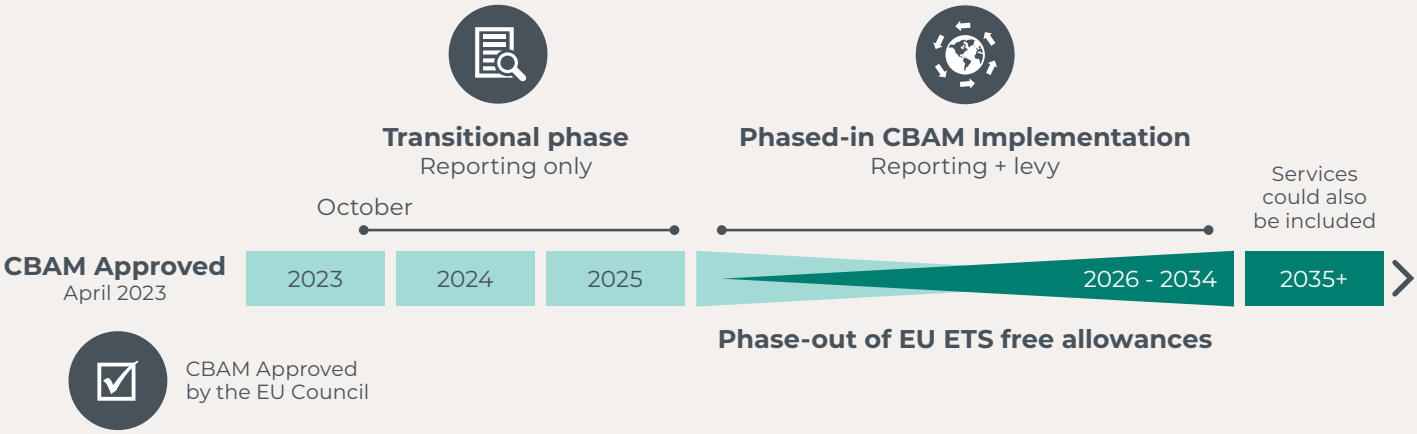
The requirement to purchase CBAM Certificates is effectively a payment for the carbon emissions

1 Council of the European Union (April 25, 2023). 'Fit for 55': Council adopts key pieces of legislation delivering on 2030 climate targets.

2 Ember (May 2024). Carbon Price Tracker: The latest data on EU ETS carbon prices.

3 IFC (April 25, 2024). CBAM: Supporting Decarbonization Efforts in Emerging Markets [Panel].

4 EU Taxation and Customs Union (2024). Carbon Border Adjustment Mechanism.



Source: *CACE, with data from the European Commission and Regulation (EU) 2023/956.*

embedded in products imported into the EU, where the price on carbon has yet to be paid for the generation of the product. From 2026, the price of CBAM Certificates is to be calculated '*...depending on the weekly average auction price of EU ETS allowances expressed in €/tonne of CO_2 emitted*'.[5] EU importers will surrender the number of CBAM Certificates corresponding to the declared emissions embedded in imports each year.

The European Commission has yet to define several crucial elements of the CBAM, including the rules for incorporating domestic carbon prices and the phased reduction of free allowances within the EU ETS.[6] As a result, the CBAM will initially apply only to the fraction of emissions not covered by these allowances. Additionally, if non-EU producers have paid a carbon price in their home countries, these costs can be fully deducted from their CBAM obligations.[7] How these two sets of rules are defined will significantly influence the ease of transitioning into CBAM.

International reactions to the CBAM have been mixed. Some countries have responded by establishing or enhancing their carbon pricing mechanisms, while others strongly oppose it.[8] The EU cites California, in the United States, as a region where a CBAM is already in place regarding certain electricity imports.[9] Australia, for instance, has commissioned a review on the feasibility of an Australian CBAM, particularly in relation to steel and cement, in the context of Australia's Safeguard Mechanism (a hybrid of the EU ETS). The review findings are expected by the end of September this year.[10] There are no current public policy plans for implementing an Australian CBAM. With a steadily increasing carbon price, Canada may seek bilateral agreements with the EU to align efforts. Meanwhile, China, already operating an ETS and expanding it to key industries, has challenged the CBAM at the WTO, but might benefit from its existing domestic carbon pricing mechanisms. Brazil, India, and South Africa have also raised concerns, highlighting the need to consider the development needs of developing countries under international environmental law.

These mixed reactions highlight the cost and risk of transition. Companies exporting to the EU and their EU partners will face an investment decision: pay the levy; invest in decarbonization; or re-shift trade flows. Andrea Bonzanni, International Policy Director at IETA, recently highlighted the latter as a considerable risk after this year's European Climate Summit: the scenario '*...where trade flows are simply diverted, and markets are segmented between low-carbon goods entering the EU and high-carbon goods traded and consumed elsewhere*'.[11] Notwithstanding this risk of carbon leakage, CBAM is nonetheless regarded by IETA as a tool to '*...produce cooperative outcomes and reduce emissions globally...*'. Countries with robust carbon pricing systems may gain competitive advantages, while those opposing the CBAM face a higher transition risk—such as the reconfiguration of supply chains and trade flows.

Another key concern relates to using a tax as a regulatory technique in isolation from other regulatory tools. There is a material risk that a tax may not sufficiently incentivize sovereign state(s) outside of the EU to reduce domestic emissions of greenhouse gases (GHG), particularly in emerging economies that have not historically been the source of global warming. Many sustainable development-related issues remain that must be addressed to raise living standards for citizens in those economies across the globe. Hence, the principle of 'common but differentiated responsibilities and respective capabilities, in light of different national circumstances'

5 European Commission, Carbon Border Adjustment Mechanism, Carbon Border Adjustment Mechanism - European Commission (europa.eu) (accessed 10 July 2024)

6 European Commission (February 28, 2024). CBAM FAQ Document.

7 Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 establishing a carbon border adjustment mechanism.

8 IETA (April 2024). International Reaction to the EU Carbon Border Adjustment Mechanism.

9 European Commission – Carbon Border Adjustment Mechanism: Questions and Answers, Brussels, 14 July 2021, QANDA_21_3661_EN.pdf (europa.eu)

10 Australian Department of Climate Change, Energy, the Environment and Water, *Australia's Carbon Leakage Review*, Australia's Carbon Leakage Review - DCCEEW (accessed 10 July 2024)

11 Andrea Bonzanni (April 2024). LinkedIn post after the 2024 European Climate Summit.

continues to be enshrined in international environmental law, including under Article 2 of the Paris Agreement.[12] Article 2 of the Paris Agreement also emphasizes the need for the Paris Agreement to be implemented to 'reflect equity.' Aside from the aforementioned risk of creating a divergence in trade flows, there is a material risk of CBAM detrimentally affecting developing countries, which may become liable to pay under CBAM without corresponding domestic or foreign investments into energy transition within their economies. This raises concerns of hardship and inequity.

Will CBAM successfully support the decarbonization of the global economy, or will it merely shift trade flows? Under the current CBAM design, the outcome is still being determined. While the policy aims to decarbonize consumption within the EU, its effectiveness in driving global decarbonization will likely depend on additional, intentional policy measures to address shortcomings in the current design, and regard for non-EU domestic policies to address issues of inequity and non-EU regional considerations more broadly. This is where cooperation frameworks developed multilaterally, such as Article 6.2 of the Paris Agreement, could enhance CBAM's potential impact and foster global collaboration on climate action.

2. Article 6.2 of the Paris Agreement

Article 6.2 of the Paris Agreement introduces a voluntary cooperative mechanism, allowing countries to meet and enhance their domestic climate targets by generating and selling ITMOs. These ITMOs, measured in tCO2e or other agreed metrics, align with participating countries' nationally determined contributions (NDCs).[13]

Article 6.2 primarily facilitates country-to-country cooperation to achieve NDCs or Other International Mitigation Purposes. It also facilitates private sector involvement in Article 6.2 projects. This can occur through bilateral agreements or unilateral collaborations, thereby boosting the potential for public-private partnerships pivotal in global decarbonization efforts. While the latter continues to be a subject of public discourse in interpreting the Article 6.2 Rules[14] (and ongoing multilateral negotiation of those rules), the current concept of a cooperative approach does not expressly preclude a host country from unilaterally cooperating with a corporate entity. The Article 6.2 rules are likely to continue to evolve on this matter. However, potentially at a slower pace than developments in the market that seek to achieve climate mitigation on behalf of host countries and corporate entities respectively, to implement domestic and corporate 2030 and 2050 climate targets in time.

This flexibility enhances the potential of Article 6.2 cooperative approaches to facilitate public-private partnerships, recognizing the private sector's central role in global decarbonization efforts—both from an impact perspective and in terms of mobilizing finance at a scale and pace required to meet the timescales for energy transition set by the scientific community. ITMOs are essential in this process, as they provide financial incentives for companies to invest in projects that reduce or remove GHG emissions and provide associated sustainable development benefits to local communities, ultimately helping to shift investment decisions towards more sustainable practices. ITMOs are subject to the accounting mechanism known as 'corresponding adjustments' to avoid double counting of ITMOs.

Furthermore, the subsequent retirement of ITMOs can assist in delivering overall mitigation of global emissions when combined with the implementation of robust domestic and corporate emission reduction strategies across value chains.

Despite the lack of consensus on further specific guidelines for Articles 6.2 and 6.4 at COP28 in Dubai, Article 6.2 was operationalized following initial Article 6.2 Rules being set at COP26 in Glasgow in 2021.[15] As of June 3, 2024, there are 82 bilateral agreements between Parties for Cooperation under Article 6.2,[16] and five hosting countries—Ghana, Vanuatu, Thailand, Guyana, and Suriname—have submitted initial Article 6.2 reports through the UNFCCC's Centralized Accounting and Reporting Platform (CARP).[17]

Specifically in the context of European Union member states, the European Commission would consider Article 6 implementation in 2026 under the draft Carbon Removals Certification Framework.[18] In the meantime, Sweden is an example of an EU member state that has set a national GHG emission reduction target that is more ambitious than its share of the EU's NDC 2030 target.[19] Sweden has engaged in bilateral cooperative approaches under Article 6.2 for the purposes of meeting its national target and with the flexibility to also cancel additional ITMOs for the purposes of overall mitigation in global emissions.[20] As such, Sweden's cooperation with countries such as Ghana, Nepal, the Dominican Republic and Switzerland provide examples of approaches that take into account the domestic considerations of each of the host countries respectively, as well as Sweden. Furthermore, in a manner that complements the attainment of the EU NDC.

12 Article 2, paragraph 2 of the Paris Agreement

13 United Nations Development Programme (November 9, 2022). What is Article 6 of the Paris Agreement, and why is it important?

14 2/CMA.3 Guidance on cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement and 6/CMA.4 Matters relating to cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement and any other guidance adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement

15 United Nations Framework Convention on Climate Change (March 8, 2022). Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on its third session, held in Glasgow from 31 October to 13 November 2021. Decision 2/CMA.3 Guidance on cooperative approaches referred to in Article 6, paragraph 2, of the Paris Agreement.

16 UNEP (May 2, 2024). Article 6 Pipeline.

17 UNFCCC (2024). Centralized Accounting and Reporting Platform (CARP).

18 European Commission (2022). Proposal for a regulation of the European Parliament and of the Council establishing a Union certification framework for carbon removals (COM/2022/672).

19 HM Ahonen, C Inclan, J Kessler & A Singh (June 2023), Raising climate ambition with carbon credits, Perspectives Climate Group

20 Note 19 above.

Despite their distinct frameworks, can these two mechanisms be integrated to achieve their common goals and meaningfully reshape the carbon footprint of carbon-intensive sectors?

3. The Opportunity: Bridging Article 6 and CBAM

During a recent International Finance Corporation (IFC) panel discussing the implications of the CBAM for emerging markets, Wagner Albuquerque de Almeida, IFC Global Director of Manufacturing, Agribusiness, and Forestry, emphasized the need for collaboration in reshaping the carbon footprint across CBAM sectors:

> *"There is one key element here: we cannot do things alone. Without partnerships, we cannot reach [the ambition] … The game here is to mobilize, mobilize, and mobilize, and create new sources of financing. So, I think we need to start to talk about carbon credits, Article 6; we need to do different things we are not talking today, that we are not seeing today, but it will be important because these are the sources of resources that need to be available to move ahead."*[21]

Echoing Wagner Albuquerque de Almeida's remarks during the IFC's panel on CBAM's implications for emerging markets, it's clear that collaboration is essential for reshaping the global carbon footprint in sectors impacted by CBAM. Mr. Albuquerque's insights highlight the urgent need to establish partnerships that mobilize new financing sources and create innovative funding structures to support a fair transition to a low-carbon economy. These cooperative efforts, pursuant to the Article 6.2 Rules, which have and continue to be developed through multilateral negotiations, can help alleviate perceptions of unfairness and drive equitable climate action.

The synergy between Article 6.2 of the Paris Agreement and the CBAM stems from their shared objective to reduce global GHG emissions. The NDC cycle and the CBAM cycle target significant milestones around 2030, offering a unique opportunity for synchronization. Despite their different focuses—CBAM on the carbon intensity of goods and Article 6 primarily on project-based emission reductions—there is potential for strategic alignment.

Furthermore, Article 6 can potentially address the inequity issues of the CBAM identified in section 1 above. In contrast to CBAM, Article 6 provides a framework for decarbonization in a host country pursuant to rules developed pursuant to a multilateral process (distinct from a unilateral or regional process). Importantly, it supports investment in a host country's decarbonization via emission reduction projects directly in that country. Moreover, decisions regarding the export of ITMOs generated by such a project are only made if the host country is satisfied and the transfer is consistent with its domestic objectives for meeting its NDC. In general, this may involve a disclosed portion of the ITMOs being retained for use for the NDC. Subject to the negotiations between the Parties, a portion may also be sought for a voluntary share of proceeds and voluntary cancellation for delivery of overall mitigation in global emissions.

Article 6 projects must follow the Free, Prior and Informed Consent process with local and Indigenous communities. It is best practice for the outcomes of that process to inform the community benefits to be delivered in conjunction with the Article 6 project. For example, the delivery of a school or other infrastructure, and potentially in conjunction with financial benefits administered via a fund.

This advantage of Article 6 over CBAM, in its capacity to facilitate change in developing countries, applies with or without integration between Article 6 and CBAM.

Given the above key pillars of alignment between CBAM and Article 6, and the potential for Article 6 to address inequities under CBAM, in the section that follows we consider how Article 6 frameworks (and their potential to mobilize financial resources) could be leveraged to prepare countries exporting to the EU for the transition into CBAM. Specifically, could Article 6 serve to alleviate some of the financial burdens introduced by CBAM through transitional finance?

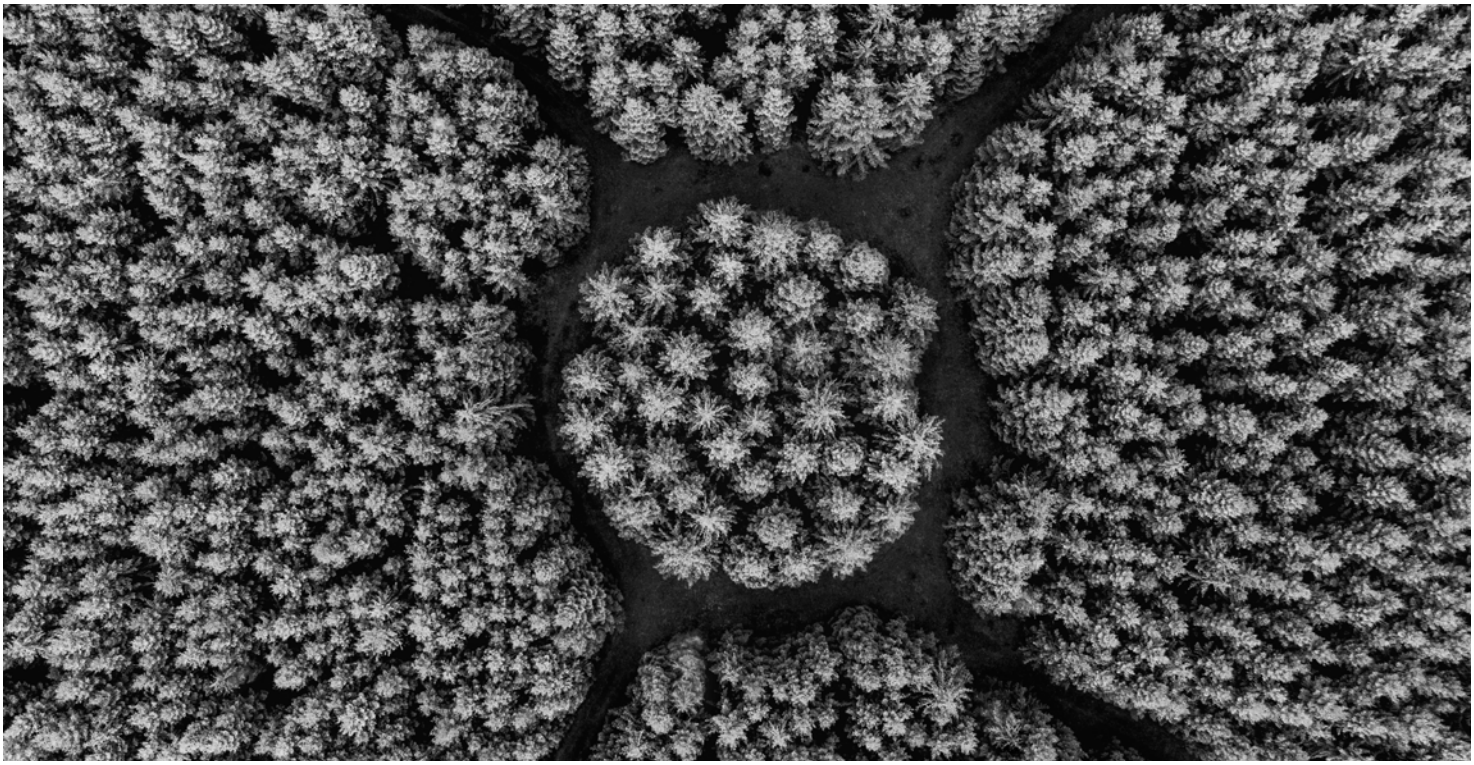
Here, we explore two potential mechanisms to integrate these frameworks effectively:

3.1 Possible mechanisms

1. **Integration of ITMOs and CBAM:** This approach would involve using ITMOs as a form of payment partially or fully equivalent to the carbon price imposed by CBAM. ITMOs could be retired instead of or in addition to CBAM payments, effectively aligning the cost incentives of both systems. Countries engaged in Article 6.2 would need to set a specific carbon price level for ITMOs. Subject to the discretion of the participating parties, this may take into account or mirror the current EU ETS price, which has consistently been above €60/tCO2e in recent years. We note that the cost of producing ITMOs(i.e., implementing the GHG reduction or removal activity, plus the related ITMOs transaction costs) for a CBAM-regulated entity has the potential to be lower than the agreed carbon price level. In which case there could be an adjusted CBAM liability. Where the carbon price paid is equivalent as a result of the investment in the Article 6 project and associated ITMOs, it is proposed that there would be no CBAM liability. Similarly, if the costs of investment in the Article 6 project and associated ITMOs are higher, the producer has the choice as to whether to invest in the Article 6 project or pay the CBAM fee instead. The feasibility of this approach would require acceptance by the EU that ITMOs represent an equivalent price on carbon for the purposes of CBAM.

This type of integrated approach has been described as a form of 'carrot' under a 'differentiated CBAM' (i.e., one that addresses the inequity issues of CBAM raised

21 IFC (April 25, 2024). CBAM: Supporting Decarbonization Efforts in Emerging Markets.



in section 1 above, including exemptions for Least Developed Countries (LDCs)) whilst retaining the 'stick' of CBAM as a means to address global carbon leakage.[22]

2. **Co-existence of Mechanisms:** This method would allow CBAM and Article 6.2 carbon finance to operate independently yet harmoniously. The independent implementation of these two mechanisms could allow Article 6.2 frameworks to be signed and operational in less time than the integration approach. Therefore, Article 6.2 frameworks could also provide early transitional finance and project implementation for CBAM-affected sectors, helping them prepare for the complete phase-out of EU ETS free allowances between 2026 and 2034, and even extend beyond CBAM sectors to promote broader international climate cooperation. Under this scenario, Article 6.2 frameworks could help reduce the emissions reported under CBAM, thus reducing the number of CBAM certificates a company must surrender and incentivizing entities impacted by CBAM to become sellers of ITMOs.

Ideally, if host countries, or corporations within a host country, are purchasing their domestic ITMOs to satisfy the CBAM requirements of the EU, the investment in Article 6 projects would include projects which reduce emissions from the CBAM-affected sectors to ultimately reduce the number of ITMOs needed to be purchased in the future for the purposes discharging CBAM requirements. We discuss examples of these projects in Section 4. This presents an opportunity for carbon offset methodologies to continue to evolve in scope as emission reduction technologies advance in CBAM-affected sectors. Furthermore, for those methodologies to continue incentivizing demand for innovative emission reduction projects.

3.2 Funding Sources for Integration and Co-existence of Article 6 and CBAM

For the integration of Article 6.2 with CBAM, CBAM revenues present a potential funding source. The CBAM is expected to generate up to €9 billion of annual revenues as of 2028. While the definitive regime will start in 2026, the levy corresponding to 2026 will be collected by Member States in 2027, and it will be only until 2028 that the fraction corresponding to the EU will be transferred to the EU budget.[23] The European Commission plans to allocate 75 percent of the revenues from the mechanism to the EU budget, while EU Member States would retain the remaining 25 percent.[24] The current approach for revenue use has been an element fueling the perceptions of unfairness set out in section 1.

In what seems to be a response to these concerns, a document[25] uploaded to the official CBAM's website on May 29, 2024, highlights several existing initiatives funded by the EU to support decarbonization efforts in EU's trade partners, such as the EU4Green partnership with countries of the Western Balkans and the EU-Africa Global Gateway Investment Package. While future CBAM revenues are not explicitly allocated to finance decarbonization efforts in developing countries, the EU Commission is expected to conduct a study before the start of the CBAM definitive regime in 2026 on the impact of CBAM on developing countries and LDCs—which would also be an opportunity to analyze the potential synergy between CBAM and Article 6. Moreover, existing decarbonization partnerships involving the EU could be a practical starting point

22 A Michaelowa, P Censkowsky, C Brandi, M Stua, S Peterson, M L Fung, C Nolden, I Venzke, T Banning, T7 Task Force Climate and Environment, Towards An Inclusive Climate Alliance With a Balance of Carrots And Sticks (21 April 2022), Towards an inclusive climate alliance with a balance of carrots and sticks (ifw-kiel.de)

23 Ellena Belletti, Nuomin Han, & Iván Pérez (September 2023). Playing by new rules: How the CBAM will change the world. Wood Mackenzie.

24 European Commission (June 20, 2023). Questions and Answers: An adjusted package for the next generation of own resources.

25 EU Directorate-General for Taxation and Customs Union (May 29, 2024). CBAM and developing countries/LDCs.

for engaging interested Parties to implement Article 6.2 pilots.

However, rethinking the use of CBAM revenues could be a strategic choice. Kateryna Holzer, Senior Researcher at the University of Eastern Finland, recently analyzed alternatives for using CBAM revenues and wrote that *"to increase the chances for justification of the EU CBAM under WTO law and to improve its compliance with the Paris Agreement that allows countries to act on climate change based on equity, CBAM revenues would need to be earmarked to support mitigation and adaptation projects outside the EU, particularly in developing countries."*[26] Therefore, following the assessment of the possible mechanisms we mentioned above, there is an opportunity to use CBAM revenues to establish and implement Article 6.2 frameworks to provide transitional finance in the form of ITMO transfers. There is also a significant opportunity to fund and implement capacity building amongst local community members to enable the successful implementation of Article 6.2 transition projects within host countries.

For the second approach, resources for Article 6 could come in the form of carbon finance from buyers of carbon credits even outside the EU. These buyers could be governments aiming to achieve their NDC targets or private sector entities striving to meet their net-zero goals.

What would be an example of where this A6-CBAM synergy could work? We will explore a possible scenario, which will then be helpful in discussing some considerations and risks of this approach.

4. Possible scenarios

The following simplified scenario illustrates how ITMO resources used as transitional finance can influence private companies' investment decisions. Our objective is not to provide a detailed technical feasibility analysis, but to exemplify the roles of stakeholders and ITMOs in a hypothetical A6-CBAM integration or co-existence.

Iron and Steel sector decarbonization in India

4.1 Context

Consider Company A in India, which currently produces steel using traditional coal-based blast furnaces and exports to several countries in the EU, including Italy. The Board of Directors of Company A has been closely following the implementation of CBAM and has started preparing reports for the transitional CBAM registry since reporting obligations began in October of last year.

The Board is concerned about the impact that CBAM could have on their company. About 15-40 percent of their annual steel exports go to Europe[27] and the average carbon intensity of steel production in the country is relatively high—around 2.55 t CO2/tonne of crude steel (TCS), compared to the global average emission intensity of 1.85 t CO2/TCS.[28] While there is still uncertainty about the carbon price the company would need to pay under CBAM, the Board has also read that Indian steel mills might incur carbon import tax charges of US$102-190 per tonne on their steel exports to the EU over the next decade, assuming a carbon price of US$70/tCO2e, which would account for 15 percent to 28 percent of current hot rolled coil prices.[29]

4.2 Pondering the options

Company A needs to choose: they can continue with its current trade arrangements and share the burden of buying CBAM Certificates; transition towards cleaner technologies; or decide to stop exporting to the EU and expand in other markets without plans to implement a CBAM.

As part of an energy-intensive industry, Company A is already pursuing cost-effective energy-saving measures, such as continuous casting, improved process control, and recuperative burners.[30] These measures have somewhat decarbonized the company's plant. Still, the carbon intensity of steel remains high as coal is not only used for the plant's high heat requirements, but it is also a process input—i.e., it is used as a reducing agent in smelting iron ore in blast furnaces.

The Board of Directors is now pondering how to prepare for CBAM and to what extent they would invest in further decarbonization technologies with higher abatement costs. The Board has considered adjusting its production processes to make them less carbon-intensive—such as investing in green hydrogen and carbon capture and storage (CCS), both recommended by the International Energy Agency[31] — but transitioning in a few years is considered by the Board to be technically and financially challenging. Without an additional incentive to continue exporting to the EU, and with CBAM levy obligations expected in less than a couple of years, Company A is leaning towards exploring partnerships in other countries to shift its exports.

4.3 ITMOs become available as transitional finance

However, let's assume that by the end of 2026, the Government of India will have established Article 6.2 Agreements with Italy (integrated with CBAM) and Japan (co-existing with other mechanisms). We also assume these agreements align projects with India's NDC and Article 6 carbon market strategy, which are eligible to generate ITMOs, including new investments in advanced waste heat recovery, green hydrogen technologies for steel production, and CCS. The Government of India has already made it a priority to decarbonize its industrial processes, aiming to reduce the emissions intensity of its GDP by 45 percent by 2030 from a 2005 baseline.[32] Moreover, the Indian Government has taken initiatives to decarbonize the steel sector, including the Perform, Achieve and Trade (PAT) scheme,

26 Kateryna Holzer (May 22, 2024). Reflections on the use of revenues from the EU CBAM. The Center for Climate Change, Energy and Environmental Law.

27 Halina Yermolenko (June 23, 2023). CBAM will affect 15-40 percent of Indian steel exports to Europe. GMK Center.

28 Ministry of Steel of India (December 26, 2022). Year-end Review-2022 Ministry of Steel.

29 Suhita Poddar (February 15, 2024). Indian steel mills face greatest CBAM risk: Goldman Sachs. Eurometal.

30 Kim, J., Sovacool, B. K., Bazilian, M., Griffiths, S., Lee, J., Yang, M., & Lee, J. (2022). Decarbonizing the iron and steel industry: A systematic review of sociotechnical systems, technological innovations, and policy options. Energy Research & Social Science, 89, 102565.

31 IEA (July, 2023). Tracking Clean Energy Progress 2023: Steel.

32 Climate Watch (August 2022). India: Summary of Updated First Nationally Determined Contribution (NDC).

the Steel Scrap Recycling Policy, and the National Green Hydrogen Mission (NGHM)[33] —we will discuss additionality concerns about this context in the next section.

In this hypothetical scenario, the joint participation of India and Japan could be vital. We assume the Italian government agrees only to trade ITMOs equivalent to the fraction of any company's production exported to Italy. Demand for the balance of ITMOs could come from a third party, potentially the Government of Japan. This arrangement, however, would be uncommon and might require additional coordination among stakeholders.

4.4 Investment decisions

This new investment environment presents additional elements for Company A to consider. After considering the additional revenue stream from ITMOs and the estimated reduction in CBAM obligations after decarbonizing its production, the Board is considering investing in additional waste heat recovery, transitioning into green hydrogen, and CCS. Final decisions would require comprehensive feasibility and additionality analysis, considering contextualized technologies' marginal abatement costs, agreed ITMO prices, and the average carbon price in the EU ETS. Company A could take the following examples as a baseline for its analysis:

Energy efficiency. Existing carbon crediting projects in India, like CDM Project 10024,[34] which implemented a waste heat recovery system in a steel plant in Andhra Pradesh, and VCS Project 712[35] for power cogeneration, provide examples of projects that could be implemented in the short term. The CDM project is expected to deliver reductions of 44,932 tonnes of CO2e annually, and the VCS project 257,798 tonnes of CO2e.

Green hydrogen. Multiple sources set the mitigation abatement cost of integrating green hydrogen in steel production at no less than US$ 60/ton of CO2 mitigated.[36] A recent study assessing decarbonization strategies for the Indian steel industry estimated that green hydrogen coupled with direct reduced iron (DRI) would cost US$112/t CO2e. Still, it would reduce 84 percent of CO2e emissions—the highest percentage from the range of analyzed measures.[37] Moreover, a report[38] from the German Corporation for International Cooperation (GIZ), in Coordination with the Ministry of Energy of Chile, assessed the potential of Article 6 to promote green hydrogen in the steel industry and estimated the carbon price required to close the feasibility gap of 120 USD/tonne CO2e in 2030. This assessment in Chile took the largest steel plant in the country as a case study, with an annual production of 664,500 tonnes of pig iron and estimated emission reductions of 300,000 tonnes CO2e/year.

Carbon Capture and Storage (CCS). The marginal abatement cost of CCS in India is estimated to be around US$90[39] and would be a complementary measure to consider in investment decisions.

Company A could even decide to implement a mix of these measures, which would depend on a comprehensive feasibility and additionality analysis. This scenario highlights how an Article 6.2 synergy with CBAM could provide the necessary financial incentives for companies to transition to cleaner technologies and reduce their carbon footprint. This approach could help mitigate the risk of diverting trade flows to avoid CBAM obligations, ensuring that emission reductions are real and substantial.

This hypothetical example also raises several questions. For instance, how should current incentives from the Indian government for cleaner technologies be factored into additionality assessments? Could more than one buyer country invest in the same ITMO-crediting project? We discuss these and other challenges and risks in the following section.

5. Challenges and Risks of Integrating CBAM and Article 6.2

Integrating CBAM and Article 6.2 presents several challenges and risks that need careful consideration to ensure its effectiveness and fairness. Here, we start discussing some of these potential issues, focusing on the concept of additionality, the alignment with NDCs, and the implications for sector-specific decarbonization efforts.

5.1 Additionality Concerns

Additionality refers to the principle that emission reductions should be additional to what would have occurred without a specific intervention. The Integrity Council for the Voluntary Carbon Market (ICVCM) has articulated this principle in the context of the voluntary carbon markets as the GHG emission reductions '*...would not have occurred in the absence of the incentive created by carbon credit revenues.*'[40] In the context of Article 6.2, ITMOs must represent genuine, additional emission reductions that would not have taken place without the international cooperation mechanism.[41]

With the deployment of CBAM, the carbon price signal created by the EU and other initiatives already in motion, such as India's National Green Hydrogen Mission in our example, might raise questions about the additionality of mitigation activities funded by ITMOs. If a carbon price or other policies promoting certain technologies influence investment decisions,

33 Vibhuti Garg, Jyoti Gulia, Kapil Gupta, Nagoor Shaik and Shantanu Srivastava (September 14, 2023). Steel decarbonisation in India. Institute for Energy Economics and Financial Analysis.

34 UNFCCC (2015). Project 10024: Waste heat recovery from stoves of Blast Furnace-3 of Visakhapatnam Steel Plant. Clean Development Mechanism Projects Database.

35 Verified Carbon Standard (2020). Introduction of Blast Furnace Gas Firing in Boiler No.6, Pbs (Pp-1), Bhilai Steel Plant and Introduction.

36 Kim et al. (2022).

37 Johnson, S., Deng, L., & Gençer, E. (2023). Environmental and economic evaluation of decarbonization strategies for the Indian steel industry. Energy Conversion and Management, 293.

38 Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH (December, 2021). Potential of Article 6 and other financing instruments to promote Green Hydrogen in the Steel, Cement and Mining Industries. The Program for Renewable Energies and Energy Efficiency in Chile.

39 Sabarish Elango, Kartheek Nitturu, Deepak Yadav, Pratheek Sripathy, Rishabh Patidar, and Hemant Mallya (October 2023). Evaluating Net-zero for the Indian Steel Industry. Council on Energy, Environment and Water (CEEW).

40 ICVCM, Core Carbon Principles, The Core Carbon Principles | ICVCM (accessed 10 July 2024)

41 Gold Standard (March 2022). Additionality under Article 6.2 of the Paris Agreement.

can we still claim that the emission reductions financed through Article 6.2 are truly additional?

To address this, projects funded through ITMOs must go above and beyond what would be economically viable and incentivized by CBAM and national policies alone. For example, in the iron and steel sector scenario, the investment in green hydrogen and CCS should represent a step further than what Company A in India would undertake purely due to the CBAM-driven carbon price and national unconditional goals. Determining additionality is challenging, given how high the carbon price CBAM creates. However, the gradual reduction of free allowances within the EU ETS until 2034 creates an opportunity to establish additionality more clearly during the early years of CBAM.

Lastly, issuing ITMOs proportional to EU exports in each project might be challenging. Would EU countries be willing to fund the decarbonization of entire plants or just the part proportional to EU exports? Additional carbon finance agreements with public or private stakeholders could be vital to ensure demand for the totality of produced ITMOs, like the co-existing Article 6.2 agreement with Japan in our example.

5.2 Prioritizing transition options

A key challenge is determining which technologies and sectors should receive funding to achieve the most significant impact. This decision involves prioritizing investments that offer considerable emission reductions but might only be financially feasible with additional support.

The activities supported by Article 6.2 must be aligned with the NDCs of the hosting countries. For instance, in the scenario we presented, we assume the ITMO-funded project would align with India's NDCs and its national priorities. India's updated NDC mentions clean technology broadly,[42] but India's Ministry of Environment, Forest and Climate Change has defined a more detailed list of which activities would be considered under Article 6.2. This list includes green hydrogen, CCS, and *"best available technologies for process improvement in hard-to-abate sectors."*[43] By determining its national Article 6.2 strategy and eligible activities, India ensures that funded activities are part of countries' broader climate strategies.

5.3 Addressing challenges

To maximize the effectiveness of CBAM-Article 6 integration, we consider it essential to:

1. Ensure Robust Additionality. Implement stringent criteria to verify that ITMO-funded projects are genuinely additional.
2. Align with NDCs. Verify that all activities are part of the countries' NDCs, ensuring they contribute to national climate goals. As such, the ITMOs can potentially represent an equivalent domestic carbon price for CBAM purposes. Alternatively, there is potential for host countries to authorize ITMOs for Other International Purposes, in particular to satisfy CBAM requirements. This could be similar to authorization for Other International Mitigation Purposes to meet requirements under the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). Both scenarios would require the EU to accept ITMOs to satisfy CBAM requirements. From our perspective, the Article 6 project doesn't have to be in the same CBAM-affected sector. However, if the EU seeks greater linkages between production costs on imports into the EU and the projects generating ITMOs in non-EU jurisdictions, there may be the potential to explore a hybrid where, say, a portion of the ITMOs to meet CBAM

42 Climate Watch (August 2022). India: Summary of Updated First Nationally Determined Contribution (NDC).

43 Ministry of Environment, Forest and Climate Change of India (February 17, 2023). Activities finalised to be considered for trading of carbon credits under Article 6.2 mechanism to facilitate transfer of emerging technologies and mobilise international finance in India.

requirements are in connection with CBAM affected sectors.

3. Prioritize High-Impact Projects. Focus on sectors and technologies that need the most support to transition.
4. Monitor and Adjust. Continuously monitor the impact of CBAM and ITMO integration and be prepared to adjust strategies to avoid unintended consequences. For example, delayed decarbonization in critical sectors. Or disparity in carbon pricing, which widens the gap between CBAM and ITMO pricing instead of narrowing the gap in line with emission reduction improvements outside of the EU (which reduce CBAM revenues).

By addressing these challenges proactively, integrating Article 6.2 and CBAM can be a powerful tool to drive global emission reductions and support a just transition to a low-carbon economy.

6. The way forward to enhanced global decarbonization

The potential integration of Article 6.2 frameworks with the EU's CBAM opens a promising avenue to overcome some of the most significant challenges and constraints of current decarbonization initiatives. This integration offers a strategic pathway to comprehensive and equitable climate action across borders.

6.1 Summary of Key Arguments

- **Challenges ahead for CBAM effectiveness.** The CBAM, while ambitious, is likely to encounter continued resistance from key trading partners. These partners view the mechanism as protectionist and disproportionately burdensome, particularly for developing economies like India, China, South Africa, and Brazil. Without a fair and robust system to aid the decarbonization of EU trade partners, there is a risk that global decarbonization efforts will be uneven and inadequate, potentially leading to the redirection of carbon-intensive trade flows to other regions.
- **Rethinking the use of CBAM resources.** CBAM-generated resources present unique opportunities for funding cooperative approaches. The EU can promote more equitable and effective climate action by reallocating these funds to support the decarbonization of trade partners through Article 6.2 frameworks. This strategy addresses the concerns of fairness and helps build the necessary infrastructure and capacity throughout supply chains to reduce their carbon footprints. While revenues could be delivered to CBAM sectors as direct international climate finance, using Article 6.2 provides a more robust and reliable mechanism for achieving decarbonization and, being a market-based approach, aims to facilitate a more efficient allocation of resources.
- **Bridging Article 6.2 and CBAM.** The integration of harmonious co-existence of Article 6.2 with CBAM offers a unique opportunity to achieve decarbonization of global supply chains. This approach can significantly mitigate the risk of diverting trade flows to avoid CBAM obligations, ensuring that emission reductions are real and substantial.

In conclusion, integrating Article 6.2 with CBAM represents a strategic opportunity to enhance global decarbonization efforts through equitable and effective international cooperation. This cooperative approach can also create a more inclusive and supportive global environment for achieving climate goals. By proactively developing frameworks that allow for the use of ITMOs within the CBAM structure, stakeholders could unlock new sources of finance and drive the adoption of low-carbon technologies.

Policymakers, governments, and the private sector are encouraged to begin promptly exploring the synergies between Article 6.2 and CBAM. This paper aims to ignite further discussions on effectively implementing these synergies, addressing associated risks, and outlining viable pathways forward.

As the CBAM transitional phase continues until December 2025, urgent action is crucial to capitalize on this critical window for setting a precedent in global climate policy.

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