How Should the Environmental Pillar of the CPTPP Be Deepened? – Implications from the Carbon Border Adjustment Mechanism (CBAM) & Indo-Pacific Economic Framework for Prosperity (IPEF)

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Introduction

Environmental and climate policy, like the international trading order, is now at a critical juncture. Two recent developments stand out. First, in February 2026, the administration of US President Donald Trump formally notified the United Nations of the United States' withdrawal from the United Nations Framework Convention on Climate Change (UNFCCC), thereby heightening uncertainty surrounding global climate policy.[1] Second, the energy supply crisis triggered by the US-Israeli strikes on Iran and the severe disruptions to shipping in the Strait of Hormuz has brought energy security concerns to the forefront.[2] This shift is especially evident in Asia, where the imperative of securing energy supplies is gaining renewed prominence.

As these compounding uncertainties intensify, asymmetries in the implementation of Nationally Determined Contributions (NDCs) – that is, countries' emissions-reduction commitments under the Paris Agreement – are becoming increasingly evident. This suggests that the interaction between trade measures and environmental objectives will become significant and contested. At the same time, states have increasingly turned to trade measures, including the prioritization of domestically produced goods, as instruments for safeguarding their own security interests.

Meanwhile, the accelerating pace of global decarbonization has generated unprecedented capital flows: according to the International Energy Agency, annual investment in clean energy is estimated at US$2.2 trillion, twice the $1.1 trillion directed to oil, natural gas, and coal (IEA 2025).[i]

This financial surge is mirrored in rapid market growth. Newly installed renewable energy capacity worldwide reached approximately 507 GW in 2023, representing a 50% increase from the previous year. The primary driver of this rapid expansion has been the dramatic decline in costs, particularly in solar photovoltaic (PV) power generation. Notably, the significant scaling-up of China's manufacturing capacity has created a global supply glut, reportedly driving down solar module prices by approximately 50% year-on-year in 2023 alone (IEA 2024).[ii]

Paradoxically, however, this transition has coincided with a wave of trade-restrictive measures targeting clean energy products, critical minerals, and recycled materials across multiple jurisdictions, fragmenting the global supply chains on which low-carbon technologies depend.

Against this backdrop, this paper focuses on the EU Carbon Border Adjustment Mechanism (CBAM) and Indo-Pacific Economic Framework for Prosperity (IPEF) to explore the intersection of trade and climate policy. It further considers how an environmental chapter within the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) framework could contribute to addressing these challenges. The need for such an approach is already gaining recognition, as indicated by the environmental recommendation[3] in the 2024 Vancouver Statement, which reflects a growing shared understanding among CPTPP members.

EU Carbon Border Adjustment Mechanism & Its Impact

Carbon border adjustment mechanisms (CBAMs) are broadly defined as policy instruments whereby jurisdictions bearing the costs of stringent climate regulation impose taxes or levies on imports, or require importers to purchase credits for imports

1 Legal scholars appear to be divided on the question of whether the "advice and consent of the Senate" – obtained by a two-thirds majority vote at the time of the US ratification of the UNFCCC in 1992 – would remain valid following a complete withdrawal from the treaty, or whether re-accession would require a renewed process of Senate approval. On this point, Galbraith (2020) has offered the following observation: "Does the original Senate resolution of advice and consent to a treaty remain effective even after a President has withdrawn the United States from a treaty? I argue that the answer to this question is yes, except in certain limited circumstances." The Paris Agreement is open for signature and subject to ratification, acceptance, or approval by States and regional economic integration organizations that are Parties to the Convention (Article 20(1), Paris Agreement). Therefore, it should be noted that eligibility to join the Paris Agreement itself is premised on being a Party to the UNFCCC. Galbraith, J. (2020). Rejoining Treaties. *Virginia Law Review*, 106, 73; University of Pennsylvania Law School, Public Law Research Paper No. 20-18. https://ssrn.com/abstract=3619175

2 Specifically, this includes contingency measures such as the recommissioning of coal-fired power plants to replace oil and gas. Measures utilizing other clean energy technologies, including renewable energy, may also constitute viable policy options.

3 Recommendation 4: Senior Officials to deepen discussions to identify meaningful ways to address collective environmental challenges such as climate change, biodiversity loss, and pollution, including considerations to potentially update the Environment Chapter. Vancouver Statement on the Occasion of the Eighth Commission Meeting of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, Nov. 28, 2024. https://www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/cptpp-ptpgp/2024-11-28-vancouver-statement-declaration.aspx?lang=eng

originating from countries with comparatively less stringent climate policies. As of this writing, the EU remains the sole jurisdiction to have formally implemented such a mechanism, namely the EU CBAM, targeting so-called "hard-to-abate" sectors, including steel, aluminum, fertilizer, hydrogen, cement and electricity. The definitive period, during which the mechanism is fully implemented, began in 2026. Starting in February 2027, importers will be required to purchase and surrender CBAM certificates corresponding to the embedded carbon emissions of their imported goods, with the cost of certificates determined by the difference between the carbon price paid in the country of origin and the EU ETS carbon price.

Notably, the United Kingdom has put forward a proposal for its own CBAM scheme, scheduled to take effect in 2027, and continues to negotiate with the EU over reciprocal CBAM exemptions contingent on the linking of their respective emissions trading systems. Furthermore, in a development illustrative of the mechanism's broadening scope, the European Commission recently proposed regulatory amendments that would extend coverage to approximately 180 downstream iron and aluminum products, including automotive components, appliances and medical devices. Broadening the scope to include assembled products embedded in extended supply chains could draw small and medium-sized enterprise exporters into the CBAM's regulatory reach.

The EU's pioneering CBAM has prompted similar policy discussions in several other jurisdictions. Among them, the UK, which is already engaged in active negotiations with the EU, appears to be the most likely to introduce a CBAM in the near term. Australia, Thailand, and Taiwan are also examining similar frameworks, pointing to a broader trend toward the adoption of carbon border adjustment measures. If these mechanisms are introduced on different timelines and under divergent regulatory frameworks, however, they may give rise to a "spaghetti bowl" effect (Bhagwati, 2003).[iii]

Fragmentation Rather Than Harmonization

This paper argues that, rather than converging toward a harmonized international regime, these mechanisms are more likely to develop in a fragmented, jurisdiction-by-jurisdiction manner, driven primarily by the need to ensure compatibility with WTO rules, specifically the national treatment principle. This tendency toward fragmentation is fundamentally attributable to the considerable heterogeneity of existing carbon pricing systems across countries. The divergence is evident along multiple dimensions: whether the underlying instrument takes the form of a carbon tax or an emissions trading scheme; the specific design features and trading modalities adopted within each scheme; and further variation arising from differences in enabling legislation. Taken together, these structural differences render a coherent and mutually consistent multilateral architecture for CBAMs markedly difficult to achieve.

The following discussion examines two opposing views of the CBAM and explores how such measures might affect international environmental governance and global trade.

Trade law scholars Mehling *et al.* (2019)[iv] discuss how the Paris Agreement's approach leads to climate efforts that remain heterogeneous and asymmetric, creating uneven carbon constraints across countries and increasing the risk of carbon leakage. They suggest that carbon border adjustment measures can play a useful role in leveling the playing field, arguably as the only unilateral policy option available. On this basis, they propose a framework for designing these measures in a way that remains consistent with the General Agreement on Tariffs and Trade (GATT).[iv]

According to Milner (2024),[v] "international regime uncertainty" reflects the instability of the fundamental components of the global order. She explains that heightened regime uncertainty can raise the risk of bargaining failures and, consequently, conflicts. Specifically, she notes that "regime uncertainty may also decrease the likelihood that major trading powers can reach a bargain that avoids escalating rival trade measures or even a trade war." Against this background, Milner points out that new tariffs such as the CBAM, as well as industrial policies favoring the domestic production of electric vehicles, such as the US Inflation Reduction Act (IRA), can serve to bridge carbon price gaps, prevent carbon leakage, and build political support for the energy transition. However, she cautions that these measures simultaneously reinforce protectionism and generate discrimination among exporters.

Viewed through the lens of Mehling *et al.*, the CBAM serves as a driving force that strengthens global climate action and promotes uniformity by gradually leveling carbon constraints across countries. In fact, according to the World Bank, the adoption of carbon pricing accelerated significantly between 2019 and 2026, with the number of implementing jurisdictions expanding from 56 to 87.[4] This surge can be seen as evidence that measures such as the CBAM have effectively pushed other nations to introduce their own climate policies.

However, if we adopt Milner's perspective, the picture reverses.

4 See World Bank Group (2019), State and trends of carbon pricing 2019. https://doi.org/10.1596/978-1-4648-1435-8; and World Bank (2026), State and trends of carbon pricing 2026. https://doi.org/10.1596/978-1-4648-2348-0

The CBAM is seen as fueling protectionism, undermining the most-favored-nation (MFN) principle – a cornerstone of free trade – and further exacerbating the "regime uncertainty" of the international system. Naturally, such broader instability in the global order would spill over into international climate governance. With international climate cooperation already fragile – illustrated by the first Trump administration's withdrawal from the Paris Agreement and the later US withdrawal process from the UNFCCC – the CBAM might further destabilize the very climate cooperation the EU aims to protect.

In reality, the EU's CBAM has advanced precisely as the free trade order has faltered. In December 2019, the first Trump administration blocked the appointment of new members to the WTO's Appellate Body – which serves essentially as the supreme court for trade disputes – rendering it dysfunctional. Coincidentally, in that same month, Ursula von der Leyen took office as president of the European Commission, positioning climate action as the top priority of her term and proposing the unprecedented CBAM. Ironically, the unraveling of the trade order and the rise of the CBAM coincided almost exactly.

Proposal for Deepening the Environmental Pillar of the CPTPP: Implications from the CBAM

Faced with the dual challenge of a fractured trade order and fluid climate governance, this paper explores the potential role of plurilateral free trade agreements in simultaneously restoring trade rules and enhancing environmental governance. Specifically, resolving the core dilemma of the CBAM – maximizing its positive climate impact while mitigating the risks of protectionism – requires a robust rule-making framework. In an era of US unpredictability, the CPTPP has the potential to serve uniquely positioned to serve as such a bulwark. To deepen the environmental pillar (Chapter 20) of the CPTPP, three specific elements are required:

(1) Incorporation of Climate Change Provisions

Multilateral and plurilateral free trade agreements should explicitly incorporate climate change provisions into their treaty texts. The CPTPP does not explicitly refer to climate change in its Environment Chapter, although Article 20.15 addresses the transition to a low-emissions and resilient economy. This leaves scope for more explicit and operational climate-related provisions in a future update of the agreement.

Schott (2025)[vi] argues that updated CPTPP rules could incorporate trade-and-climate disciplines, including common carbon accounting standards for carbon pricing, steelmaking emissions, renewable-energy R&D subsidies, and methane reduction commitments. The case for such an approach becomes even more compelling in light of growing instability in the UN climate regime: embedding climate considerations into trade agreement texts could provide a supplementary governance framework. In this regard, the UNFCCC's near-universal membership – encompassing 198 parties as of this writing – offers a broad institutional foundation for such efforts, without requiring the imposition of additional legally binding obligations on its parties.

The proposed EU-US Global Arrangement on Sustainable Steel and Aluminum, negotiated during the administration of President Joe Biden,[5] offers a useful point of reference. It was designed to address climate change and excess capacity[6] simultaneously, demonstrating that trade agreements can be designed to serve this dual purpose.

Although the IPEF is not a free trade agreement, its Clean Economy Agreement provides a useful reference point for how plurilateral trade-related frameworks can address greenhouse-gas measurement, product disclosure, interoperability, and non-tariff barriers affecting low- and zero-emission goods and services.

(2) Interoperability of Emissions Measurement Methodologies

Multilateral and plurilateral free trade agreements should promote the interoperability of methodologies for measuring greenhouse gas emissions, an issue also addressed in the Clean Economy Agreement under IPEF. As embodied emission measurement and disclosure requirements proliferate across many domains of economic activity, effective cooperation within multilateral and plurilateral trade frameworks could offer significant opportunities to streamline measurement and reporting processes. At present, companies face emissions-related obligations across multiple dimensions, including corporate-level emissions reporting, green public procurement criteria, and product-level carbon footprint labeling. This burden is compounded by the considerable variation across jurisdictions in the methodologies underpinning measurement, reporting, and verification (MRV), leaving companies mired in procedural compliance demands *(Chart)*.

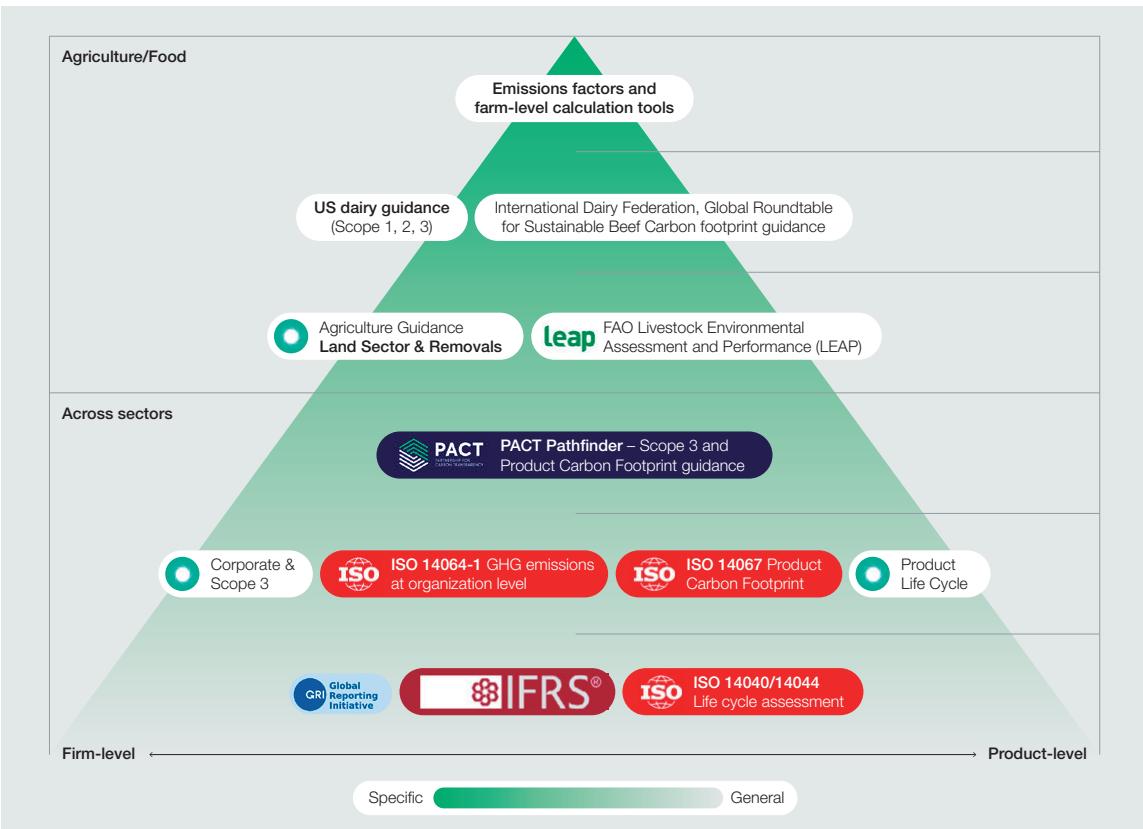
The International Organization for Standardization (ISO) and the

5 Office of the United States Trade Representative. (2021, November). *Fact Sheet: U.S.–EU Arrangements on Global Steel and Aluminum Excess Capacity and Carbon Intensity.* https://ustr.gov/about-us/policy-offices/press-office/fact-sheets/2021/october/fact-sheet-us-eu-arrangements-global-steel-and-aluminum-excess-capacity-and-carbon-intensity

6 According to the OECD Steel Outlook 2026, global steel excess capacity is projected to reach 745 million tonnes by 2028. At the same time, most new steelmaking capacity is being added outside the OECD, while Chinese steel exports reached a record 131 million tonnes in 2025 (OECD, 2026). OECD (2026), OECD Steel Outlook 2026, OECD Publishing, Paris, https://doi.org/10.1787/99ab9b0c-en.

CHART

Emissions measurement in food supply chains



Source: OECD, Business at OECD, and World Economic Forum (2023), "Emissions Measurement in Supply Chains: Business Realities and Challenges," White Paper, November 2023. https://www3.weforum.org/docs/WEF_Emissions_Measurement_in_Supply_Chains_2023.pdf

GHG Protocol have recently initiated efforts to align their methodologies – a promising development.[7] Nevertheless, if multilateral and plurilateral trade frameworks go further and formally ensure the interoperability of national MRV methodologies for carbon accounting, they would meaningfully reduce the procedural costs borne by companies and thereby stimulate trade in low-carbon goods and decarbonized materials.

The cases of green steel, which often involve complex supply chains, illustrate this point concretely. Achieving methodological interoperability in these sectors requires agreement on at least two fronts: the boundaries of emissions measurement and the distinction among blast furnace (BF), electric arc furnace (EAF) technologies, and those advanced technologies – points on which current approaches diverge. Analogous challenges arise in the field of the circular economy, where the absence of harmonized methodologies can complicate cross-border trade and investment in recycled materials.

Given that decarbonization of the goods and the decentralization of energy systems are increasingly recognized as long-term structural challenges, such cross-border initiatives[8] will become even more

7 Specifically, the ISO states the following: "One of the barriers to effective climate action is the fragmentation of standards and policies. This new partnership, which includes a common approach and portfolio of dual-logo standards covering corporate, product and project accounting, addresses that challenge by aligning the existing portfolio of GHG standards and providing a shared platform for future co-development." International Organization for Standardization (2025, September 9). *ISO and GHG Protocol announce strategic partnership to deliver unified global standards for greenhouse gas emissions accounting.* https://www.iso.org/news/2025/09/iso-and-ghgp-partnership

8 Shibata (2023) examines the upstream import dynamics of green hydrogen, drawing on the steel sector as an illustrative case study. The harmonization of methodologies constitutes a critical prerequisite not only for environmental governance but also for the promotion of trade more broadly. Shibata, Y. (2023). "Comparison of Hydrogen Imports vs. Product Imports". https://eneken.ieej.or.jp/en/report_detail.php?article_info__id=11479

necessary. In particular, mutual recognition agreements and the interoperability of MRV systems for greenhouse gas measurement can help alleviate the compliance burden arising from fragmented regulatory requirements.

(3) Transparent Default Values

The third point concerns the importance of setting transparent default values in the communication of environmental product information. Data on the environmental attributes of products is transmitted along supply chains, from upstream to downstream, and serves as the foundation for calculations such as product-level carbon footprint assessments.

However, where supply chains are extensive or a product is composed of many components, tracing actual emissions data throughout the entire supply chain quickly becomes impractical. In such cases, standardized default values are employed as a substitute, thereby avoiding the risks associated with inconsistent data inputs. Equally important is ensuring that the underlying databases from which these default values are drawn remain accessible to a broad range of actors – including companies, consumers, and public authorities – so that the default values are applied consistently and transparently.

Multilateral and plurilateral mechanisms that ensure transparent governance of product-specific default values and enable their mutual use across jurisdictions would generate meaningful gains in market efficiency. At the same time, if default values are set arbitrarily – for instance, in a manner that disadvantages a specific country – they would raise concerns of protectionism disguised as environmental protection. To prevent this, a mechanism to ensure the transparency of default values within multilateral and plurilateral frameworks is necessary. It is also worth noting that such data collection efforts could help reduce the risks of resource shuffling – that is, the practice whereby companies or jurisdictions manipulate the allocation of resources on paper to meet regulatory thresholds, without achieving genuine reductions in environmental impact.

Conclusion

The CPTPP's environmental pillar would be meaningfully strengthened by three elements: the explicit incorporation of climate change provisions into the framework; a staged commitment to MRV interoperability, beginning with mutual recognition of existing methodologies; and a CPTPP-based mechanism for the transparent governance of default values, without which product-level carbon footprint calculations risk functioning as instruments of disguised protectionism.

In this context, Mehling *et al.* (2019)[iv] observe that, while such climate-related, border adjustment measures entail legal uncertainty regarding their consistency with GATT Articles I and III – even if they may ultimately find a defense under Article XX – their legitimacy depends heavily on a "fair, inclusive, and transparent process". It is arguably the role of free trade agreements to facilitate and underwrite precisely such a process.

Taken together, these reforms would allow the CPTPP, supported by robust middle-power cooperation, to serve as a meaningful vehicle for governing the trade dimensions of global decarbonization in an era of geopolitical fragmentation.

References

i. IEA (2025), "World Energy Investment 2025", IEA, Paris, https://www.iea.org/reports/world-energy-investment-2025.

ii. IEA (2024), "Renewables 2023", IEA, Paris, https://www.iea.org/reports/renewables-2023.

iii. Bhagwati, J. (2003). "Testimony before the Subcommittee on Domestic and International Monetary Policy, Trade and Technology", US House of Representatives, April 1. https://doi.org/10.7916/D8FR038G

iv. Mehling, M. A., van Asselt, H., Das, K., Droege, S., & Verkuijl, C. (2019). "Designing Border Carbon Adjustments for Enhanced Climate Action", *American Journal of International Law*, 113(3), 433–481. https://doi.org/10.1017/ajil.2019.22

v. Milner, H. V., & Voeten, E. (2024). "International Regime Uncertainty", Available at SSRN: https://ssrn.com/abstract=4826394 or http://dx.doi.org/10.2139/ssrn.4826394

vi. Schott, J. J. (2025). "The CPTPP: Past, Present & Future", *Japan SPOTLIGHT*, January/February 2025, Japan Economic Foundation. https://www.jef.or.jp/journal/pdf/259th_Cover_Story_04.pdf

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