

ORIGINAL ARTICLE

Accounting for Carbon Pricing in Third Countries Under the EU Carbon Border Adjustment Mechanism

Anatole Boute

Faculty of Law, The Chinese University of Hong Kong, Hong Kong
Email: anatole.boute@cuhk.edu.hk

(Received 21 October 2023; revised 1 February 2024; accepted 8 February 2024; first published online 5 March 2024)

Abstract

To avoid penalizing exporters that already paid carbon prices, the EU Carbon Border Adjustment Mechanism credits carbon taxes and Emissions Trading Schemes in third countries. By excluding instruments of traditional regulation (e.g. emission standards) and indirect carbon prices (e.g. fuel excise taxes) from this crediting mechanism, the EU is criticized for discriminating against countries that do not follow its climate model, in breach of international trade and climate law. This article seeks to nuance this criticism by arguing that the calculation of actual emissions (instead of default values) under the EU CBAM allows exporters to reflect compliance with foreign emission standards, and thus respects states' right to pursue emission reductions through traditional regulation. However, amendments of the CBAM Regulation are necessary to recognize the positive and negative impact of indirect carbon prices on decarbonization, and the role of carbon-crediting mechanisms in equalizing carbon costs in a more flexible and equitable way.

Keywords: CBAM; GATT; Paris agreement; carbon pricing; fuel excise taxes; fossil subsidies

1. Introduction

In May 2023, the European Union (EU) adopted the Carbon Border Adjustment Mechanism (CBAM) to address the risk of carbon leakage resulting from its ambitious domestic climate policy.¹ In particular, the CBAM responds to the risk that increasing prices on the EU Emissions Trading System (ETS) could incentivize companies to transfer their production to, or increase their imports from, countries with lower carbon costs. To level the playing field with foreign producers, the CBAM imposes on carbon-intensive imports a carbon cost equivalent to the EU ETS. Given the objective of carbon cost equalization, importers can reduce their CBAM burden for the carbon prices they paid in the country of origin for the emissions embedded in their goods.² For the EU, the CBAM is essential to safeguard the ambition of its climate action, as it transitions away from the free allocation of carbon allowances to industries exposed to carbon leakage. Crediting 'carbon prices paid in a third country' is necessary to avoid penalizing exporters that already operate under carbon taxes or an ETS in their country of origin.³ This mechanism is

¹Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 establishing a carbon border adjustment mechanism OJ 2023 L 130/52. On 30 June 2021, the EU Parliament and Council committed to climate neutrality by 2050. Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality OJ 2021 L 243/1.

²Regulation (EU) 2023/956, Article 9.

³Ibid.

also part of the EU's efforts to encourage decarbonization abroad, and push for the global pricing of greenhouse gas (GHG) emissions.

However, by only crediting direct carbon pricing instruments (i.e. carbon taxes or ETs), the EU CBAM has been criticized for discriminating against exporting states that follow a different regulatory approach to the EU carbon pricing model, in breach of international trade and climate law. The EU would fail to adequately recognize the efforts of states opting for instruments of traditional environmental regulation (e.g. performance standards), and indirect carbon pricing (e.g. fuel excise taxes), in contradiction of the flexibility required under the exception regime of the General Agreement on Trade and Tariffs (GATT).⁴ Similarly, the rigid application of carbon prices to third countries regardless of their stage of development would be incompatible with the principle of Common but Differentiated Responsibilities and Respective Capabilities⁵ and states' right to determine their national climate policies under the Paris Agreement.⁶ Pushing states to adopt direct carbon pricing, instead of alternative climate policies that might better fit their institutional environment, could also result in ineffective climate regulation abroad.⁷ The EU's attempt to exercise international climate leadership through the CBAM would thus be counterproductive and result in legal disputes. This criticism is important for the EU and international climate change mitigation efforts, as it puts into question the legality and legitimacy of the first major attempt to implement a border carbon adjustment mechanism.

This article reviews the criticism of the CBAM carbon pricing crediting mechanism, with a focus on its compatibility with international trade and climate law and its environmental effectiveness. The analysis therefore builds on the trade and climate law literature on border carbon adjustments, and on the environmental law literature on carbon markets and their export to third countries. Following an introduction of the CBAM crediting mechanism and its role in the EU's international climate leadership, the article reviews its characterization as incompatible with WTO law, the Paris Agreement and environmental law theory, and seeks to nuance this criticism.

In particular, the following analysis points out how, contrary to the prevailing views in the literature, the EU CBAM implicitly reflects traditional climate regulation in its design. By calculating importers' CBAM obligations based on the actual emissions embedded in their goods, the EU allows foreign producers to account for the emission reductions achieved through performance standards and other technology requirements. The CBAM does not equalize the implicit costs associated with these regulatory instruments, but this can be justified taking into account the absence of established methodologies to assess the carbon-price equivalence of these policies. At the same time, this article agrees with the criticism on the failure of the CBAM to account for pricing instruments other than direct carbon pricing. It provides additional support to the

⁴See e.g. I. Espa and K. Holzer (2023) 'From Unilateral Border Carbon Adjustments to Cooperation in Climate Clubs: Rethinking Exclusion in Light of Trade and Climate Law Constraints', *European Yearbook of International Economic Law* 13, 389; G.M. Durán (2023) 'Securing Compatibility of Carbon Border Adjustments with the Multilateral Climate and Trade Regimes', *International & Comparative Law Quarterly* 72, 73, at 97; I. Venzke and G. Vidigal (2022) 'Are Trade Measures to Tackle the Climate Crisis the End of Differentiated Responsibilities? The Case of the EU Carbon Border Adjustment Mechanism (CBAM)', in M. den Heijer and H. van der Wilt (eds.), *Netherlands Yearbook of International Law 2020: Global Solidarity and Common but Differentiated Responsibilities*. Springer, 187.

⁵Article 3.1, United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107 (UNFCCC); Article 2.2, Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) 3156 UNTS.

⁶Article 4.2, Paris Agreement.

⁷On the 'incentive[s] for good foreign environmental practice' depending on the design of climate policy crediting mechanisms, see A. Marcu, M. Mehling, and A. 'Cosbey (2020) 'Border Carbon Adjustments in the EU: Issues and Options', European Roundtable on Climate Change and Sustainable Transition, at 37–38, <https://ercst.org/wp-content/uploads/2021/08/20200929-CBAM-Issues-and-Options-Paper-F-2.pdf>. See also G. Dominioni and D.C. Esty (2023) 'Designing Effective Border Carbon Adjustment Mechanisms: Aligning the Global Trade and Climate Change Regimes', *Arizona Law Review* 65, 1.

argument that existing methodologies would allow the EU to calculate the effective or total carbon prices imposed on carbon-intensive industries, helping it to align the CBAM to the GATT and international climate law.⁸ The article concludes with specific recommendations of amendments of the CBAM Regulation that would allow the EU to limit the risk of incompatibility with international trade and climate law, and ensure greater equity and environmental effectiveness of its crediting mechanism.

2. The CBAM Crediting Mechanism

The CBAM complements the efforts of the EU to decarbonize its domestic industry through price signals on the EU ETS. As higher EU ETS prices are needed to signal to the industry the need to decarbonize production processes, the risk of carbon leakage intensifies. Protecting the EU industry through the free allocation of allowances neutralizes the price signals that the ETS is supposed to send to carbon-intensive producers.⁹ Instead, equalizing the carbon cost of foreign exporters and domestic producers through the CBAM would allow incentivizing the decarbonization of the EU and foreign manufacturing industry.¹⁰ Based on this ‘strict equalization logic’,¹¹ the EU CBAM has been designed to reflect the EU climate policy, both in terms of carbon price levels imposed on carbon-intensive imports and the type of climate policies in third countries eligible for crediting, with important implications under international trade and climate law as will be discussed below (sections 5–6).

To understand the carbon price crediting mechanism, it is necessary to first introduce the general design of the CBAM, including the calculation of emissions embedded in imported goods, taking into account its relevance for the recognition of instruments of traditional environmental regulation in third countries.

2.1 Equalization of Carbon Costs

The EU CBAM is a declarative system that exposes importers of carbon-intensive goods to the carbon prices formed on the EU ETS. The goods subjected to CBAM (cement, electricity, fertilisers, iron and steel, aluminium, hydrogen) shall only be imported into the EU by an authorized CBAM declarant.¹² Every year, each authorized declarant shall submit a CBAM declaration for the previous year that sets out the total quantity of each type of CBAM goods imported, the total embedded emissions, and the total number of CBAM certificates to be surrendered.¹³ In essence, the CBAM obligation thus consists in the purchase of CBAM certificates on a common central platform, and the surrender via the CBAM registry of a number of certificates corresponding to the embedded emissions of the imported goods.¹⁴ The price of CBAM certificates shall be calculated as the average price of carbon allowances auctioned within the EU ETS for each week.¹⁵

This arrangement automatically extends to importers the level of prices on the EU ETS, allowing the EU to ‘ensure that imported products are subject to a regulatory system that applies

⁸See mainly Dominioni and Esty, *supra* n. 7, at 29–41. See however A. Marcu et al. (2023) ‘Methods of Crediting Carbon Prices under the CBAM’, European Roundtable on Climate Change and Sustainable Transition, at 5, <https://ercst.org/crediting-carbon-prices-under-the-cbam/> (arguing that ‘any attempt to account for policies other than explicit carbon pricing under a carbon tax or an emissions trading system gives rise to significant conceptual and methodological challenges ... All this lends support to the restrictive approach envisioned in Article 9 of the CBAM Regulation’).

⁹Recital 11, Regulation (EU) 2023/956.

¹⁰*Ibid.*, Recital 14 (‘the CBAM is expected to effectively support the reduction of greenhouse gas emissions in third countries’).

¹¹Espa and Holzer, *supra* n. 4, at 397.

¹²Article 4, Regulation (EU) 2023/956.

¹³*Ibid.*, Article 6.

¹⁴*Ibid.*, Article 20.

¹⁵*Ibid.*, Article 21.

carbon costs *equivalent* to those borne under the EU ETS, resulting in a carbon price that is *equivalent* for imports and domestic products'.¹⁶ In short, equalizing carbon pricing for EU and imported products is considered necessary to level the playing field for foreign and EU producers of energy/carbon-intensive products, and thus avoid the transfer of EU production abroad or the replacement of EU products with imports from jurisdictions with no or lower carbon prices.

2.2 Calculation of Emissions

The CBAM applies to the embedded emissions in imported goods, i.e. the direct GHG emissions released during their production and the indirect emissions associated with the electricity consumed during these production processes.¹⁷ For goods other than electricity, embedded emissions must be calculated based on actual emissions, e.g. determined based on measurement systems.¹⁸ Embedded emissions must be verified by an accredited verifier that shall prepare a verification report, e.g. covering the quantification of direct emissions of the relevant production installations and the embedded emissions associated with the relevant input materials.¹⁹

Default values only apply in cases where actual emissions cannot adequately be determined. These default values will be set based on the average emission intensity of the 10% worst performing EU ETS installations for that type of goods in the absence of reliable data for the exporting country.²⁰ For embedded emissions in electricity imports, default values apply, unless these imports are governed by a power purchase agreement between the CBAM declarant and a foreign producer, for a power plant connected to the EU transmission system and that does not emit more than 550 grams of CO₂/kilowatt-hour.²¹

As will be examined in more detail below, the use of actual emissions, instead of default values, is important for the incentives the CBAM provides to the implementation of effective decarbonization initiatives in third countries, and its compatibility with international trade and climate law.

2.3 Carbon Price Reduction

The EU allows CBAM declarants to claim a reduction of the number of CBAM certificates due based on the price of carbon paid in the country of origin.²² This carbon price reduction arrangement is logical given the CBAM objective of achieving equivalent carbon pricing for domestic and imported products. The alternative option, of requiring the purchase of CBAM certificates for all embedded emissions regardless of the payment of carbon prices in the country of origin, would penalize exporters in countries with ambitious carbon prices,²³ and would not be justified

¹⁶Ibid, Recital 15 (emphasis added). With the CBAM, the EU aims to 'ensure *equal* treatment for products made in the EU and imports from elsewhere'. European Commission, 'Carbon Border Adjustment Mechanism: Questions and Answers' (14 July 2021), https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_3661.

¹⁷Article 3.22, Regulation (EU) 2023/956. For iron and steel, aluminium and chemicals, embedded emissions are limited to direct emissions, and for the other goods subjected to CBAM, the CBAM also covers indirect emissions.

¹⁸Article 7.2, Regulation (EU) 2023/956; Article 4, Commission Implementing Regulation (EU) 2023/1773 of 17 August 2023 laying down the rules for the application of Regulation (EU) 2023/956 of the European Parliament and of the Council as regards reporting obligations for the purposes of the carbon border adjustment mechanism during the transitional period OJ 2023 L 228/94.

¹⁹Article 8, Regulation (EU) 2023/956.

²⁰Ibid, Article 7 and Annex IV.

²¹Ibid, Article 7.3 and Annex IV, para. 5.

²²Ibid, Article 9.

²³According to the European Commission, 'Proposal for a Regulation of the European Parliament and of the Council Establishing a Carbon Border Adjustment Mechanism' COM(2021) 564 final, 'the CBAM should in no case result in more favorable treatment for Union goods compared to goods imported into the customs territory of the Union'.

based on the EU's objective of preventing carbon leakage.²⁴ The CBAM Regulation sets conditions to the crediting of carbon pricing in third countries.

First, to be eligible for crediting, the carbon price must take the form of a tax, levy, fee, or an emission allowance under a GHG emissions trading system.²⁵ The 2023 Commission Implementing Regulation laying down the rules for the application of the EU CBAM requires 'the provision of a legal act providing for the carbon price'.²⁶ This definition, and the Commission's additional clarification, could be interpreted as excluding voluntary carbon credit markets and mechanisms that consist in the trading, on a voluntary basis (e.g. to offset a company's emissions), of certificates generated from emission reduction projects, without legal framework governing these mechanisms in the third country.²⁷ This could also potentially disqualify carbon pricing initiatives by industry associations,²⁸ unless these are based on a legal act in the third country.

Second, the price must be paid under a carbon emissions reduction scheme, and apply to GHG emissions emitted during the production of goods. By explicitly requiring that the carbon price shall be calculated on GHG emissions, the EU CBAM effectively excludes 'positive' indirect carbon pricing mechanisms, i.e. policies that change the price of carbon-intensive products but are not directly based on the carbon emissions of these products (e.g. fuel excise taxes).²⁹ It more generally excludes any initiative that the country of origin does not explicitly label as a carbon emission reduction instrument.

Third, the reduction may only be claimed for carbon prices that have been 'effectively paid' in the country of origin.³⁰ As allowances allocated free of charge cannot be considered to have been effectively paid, foreign installations can only claim a reduction of their CBAM burden for the GHG emissions for which they have to acquire allowances on the market.³¹

Fourth, the carbon price reduction must be adjusted to reflect 'any rebate or other form of compensation available in [the third] country that would have resulted in a reduction of that carbon price'.³² CBAM declarants are required to keep evidence related to any rebates or compensation available. By specifically requiring that the compensation must 'have resulted in a reduction of *that* carbon price', the CBAM Regulation makes it difficult to exclude fossil subsidies that third countries can adopt to counteract the impact of direct carbon prices. Unless these 'negative' indirect pricing measures contain specific offsetting features, fossil subsidies will be difficult to link to the payment of carbon prices.³³

²⁴Marcu, Mehling, and Cosbey, supra n. 7, at 37 (concluding that 'crediting for carbon pricing would be desirable because it would help the BCA [border carbon adjustment] better achieve the objective of levelling the playing field to prevent leakage'). See also Espa and Holzer, supra n. 4, at 396.

²⁵Recital 29, Regulation (EU) 2023/956.

²⁶Article 7.1, Commission Implementing Regulation (EU) 2023/1773.

²⁷The World Bank includes carbon crediting (i.e. mechanisms generating 'tradable certificates representing emission reductions') in its definition of carbon pricing instruments. See World Bank (2023) 'State and Trends of Carbon Pricing 2023', World Bank, at 11, <https://openknowledge.worldbank.org/entities/publication/58f2a409-9bb7-4ee6-899d-be47835c838f>. For a detailed analysis of 'offset credits' under the EU CBAM crediting regime, see Marcu et al., supra n. 8, at 7–9.

²⁸See e.g. E. Benson et al. (2023) 'Analyzing the European Union's Carbon Border Adjustment Mechanism', Center for Strategic & International Studies, <https://www.csis.org/analysis/analyzing-european-unions-carbon-border-adjustment-mechanism> (arguing that US exporters of covered goods could consider establishing 'voluntary carbon pricing for goods slated for export that would allow importers to declare their carbon costs').

²⁹See World Bank, State and Trends 2023, at 11.

³⁰Article 9, Regulation (EU) 2023/956.

³¹Marcu, Mehling, and Cosbey, supra n. 7 at 38. Similarly, see OECD (2021) *Effective Carbon Rates 2021*, OECD, at 21, <https://www.oecd.org/tax/tax-policy/effective-carbon-rates-2021-0e8e24f5-en.htm>, confirming that 'any free allocation of permits [sic] in an ETS reduces the effective carbon emission base, for which the emitter needs to buy permits'. The OECD 'effective average carbon rate' therefore 'adjusts for any tax-free allowances and free permit allocation'.

³²Article 9, Regulation (EU) 2023/956.

³³On 'positive' and 'negative' indirect carbon price signals, see World Bank (2022) 'State and Trends of Carbon Pricing 2022', World Bank, at 13, <https://openknowledge.worldbank.org/entities/publication/a1abead2-de91-5992-bb7a-73d8aaaf767f>; World Bank, State and Trends, 2023, at 18.

The effective payment of carbon prices in a third country must be independently certified, i.e. certified by a person that is independent both from the CBAM declarant and the authorities of the third country.³⁴ To facilitate the application of the carbon price reduction, the EU may conclude agreements with third countries or territories.³⁵

2.4 The Linking Exemption

Jurisdictions that are fully linked to the EU ETS, or that conclude an agreement on the linking of their ETS with the EU system, are excluded from the scope of application of the CBAM Regulation, provided the carbon price is effectively charged and exporters are not entitled to any rebate beyond what is provided in the EU.³⁶ In addition, non-EU electricity systems that are integrated with the EU electricity market can exempt their electricity imports from the CBAM. They must therefore commit to climate neutrality by 2050 and to transpose EU electricity law and climate law, including ‘carbon pricing at a level equivalent to that in the Union’ and the implementation of an ETS in the electricity sector with a price equivalent to the EU to be finalized by 2030.³⁷ The European Commission is charged with assessing the fulfilment of these conditions. It is allowed to remove a country from the exemption if it ‘has not shown sufficient progress to comply [with EU law]’ or acted in a way that is incompatible with the objectives of EU climate law.³⁸

2.5 Enforcement

National authorities, designated by each member state, must verify that the number of CBAM certificates surrendered is correct and request the declarant to surrender additional certificates if needed. Declarants that fail to surrender sufficient CBAM certificates will have to pay a penalty for each certificate missing.³⁹ The European Commission registers foreign production installations in the CBAM Registry,⁴⁰ and is charged with taking action to address practices of circumvention of the CBAM Regulation.⁴¹ These practices concern ‘changes in the pattern of trade in goods’ for which there is insufficient economic justification other than to avoid the CBAM obligations, including modifying goods or artificially splitting shipments to escape the application of the CBAM.⁴² Situations where importers sent their goods to a third country before entering the EU also have to be monitored.⁴³ This could possibly help identify attempts of foreign producers to avoid the CBAM by re-routing their goods to jurisdictions that are exempt from the CBAM.⁴⁴

2.6 Carbon Pricing in Third Countries

In sum, the CBAM aims to equalize the carbon cost of domestic and foreign products by ‘mirroring’ the EU ETS prices on imports.⁴⁵ It thereby takes into account the payment of a carbon price in the country of origin, and the linking of foreign ETSS with the EU system. This allows

³⁴Article 9, Regulation (EU) 2023/956.

³⁵Ibid, Article 2.12.

³⁶Ibid, Article 2.6.

³⁷Ibid, Article 2.7.

³⁸Ibid, Article 2.9.

³⁹Ibid, Article 26.

⁴⁰Ibid, Article 10.

⁴¹Ibid, Article 27.

⁴²Ibid, Article 27.

⁴³Ibid, Recital 66.

⁴⁴Marcu, Mehling, and Cosbey, *supra* n.7, at 38.

⁴⁵European Commission, Carbon Border Adjustment Mechanism: Questions and Answers (14 July 2021), https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_3661.

CBAM declarants to avoid having to pay twice for the carbon emissions embedded in their goods, and recognizes the efforts made by trading partners with carbon pricing mechanisms in place. However, by limiting its crediting mechanism to direct carbon pricing and favoring systems linked to the EU ETS, the EU has been accused of ignoring the alternative regulatory approaches that are commonly used by states to accelerate the decarbonization of their industry. The following sections examine the extent to which the EU CBAM incentivizes effective climate regulation, or discriminates against states opting for other regulatory mechanisms, in breach of international trade and climate law.

3. Environmental Effectiveness

Direct carbon pricing, through an ETS or carbon tax, is often considered to be the most efficient approach to reduce GHG emissions,⁴⁶ but the effectiveness of these instruments eventually depends on the specific institutional environment in which they are implemented.⁴⁷ Besides the direct pricing of GHG emissions, energy taxes and pricing reforms can incentive the industry to reduce carbon emissions.⁴⁸ States can also opt to decarbonize their manufacturing industries through traditional environmental regulation (or command and control), an approach that provides more predictability and certainty in the achievement of emission reductions,⁴⁹ but often comes at the cost of greater rigidity.⁵⁰ Taking into account the importance of indirect carbon pricing and traditional regulation in the climate policy mix, does the carbon pricing crediting regime under the EU CBAM incentivize ineffective climate regulation abroad?

3.1 Traditional Regulation Under the EU CBAM

The literature on the design of CBAMs points out how crediting regimes can influence the type, and effectiveness, of climate policies adopted by trading partners. On the one hand, a narrow crediting regime, limited to direct carbon pricing, could incentivize a third country to adopt a pricing instrument that does not fit with its institutional environment, thus providing a 'limited incentive for good foreign environmental practice'.⁵¹ On the other hand, a broader crediting

⁴⁶See e.g. N. Stern and H.P. Lankes (2022) 'Collaborating and Delivering on Climate Action through a Climate Club, An independent Report to the G7', LSE, at 26, <https://www.lse.ac.uk/granthaminstitute/publication/collaborating-and-delivering-on-climate-action-through-a-climate-club-an-independent-report-to-the-g7/>; OECD (2016) 'Effective Carbon Rates: Pricing CO2 through Taxes and Emissions Trading Systems', OECD, at 29, <https://www.oecd.org/tax/effective-carbon-rates-9789264260115-en.htm>.

⁴⁷See e.g. G. Dolphin, M.G. Pollitt, and D.M. Newbery (2020) 'The Political Economy of Carbon Pricing: A Panel Analysis', *Oxford Economic Papers* 72, 472–500 (finding that 'structural political and economic forces continue to hinder the introduction of new schemes beyond jurisdictions for which the political and economic cost of pricing carbon is comparatively low'); D. Finon (2019) 'Carbon Policy in Developing Countries: Giving Priority to Non-price Instruments', *Energy Policy* 132, 38–43; B. Doda et al. (2023) 'Carbon Pricing Potential in East and South Asia: Synthesis and Case Studies for Indonesia, Vietnam, and Pakistan', German Environment Agency, https://adelphi.de/system/files/document/2023-04-17_climate-change_16-2023_carbon-pricing_east-south-asia.pdf.

⁴⁸See e.g. P. Agnolucci et al. (2023) 'Measuring Total Carbon Pricing', *The World Bank Research Observer*, at 2, <https://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-10486> (finding that 'other policies, such as the net fuel tax burden, can provide the same incentive delivered by direct carbon pricing').

⁴⁹On the certainty provided by bans and phase out decisions, see e.g. D. Nachtigall et al. (2022) *The Climate Actions and Policies Measurement Framework: A Structured and Harmonised Climate Policy Database to Monitor Countries' Mitigation Action*, OECD, at 20, <https://www.oecd.org/publications/the-climate-actions-and-policies-measurement-framework-2caa60ce-en.htm>; European Commission (2022) 'Guidelines on State Aid for Climate, Environmental Protection and Energy 2022', C(2022)481 final, para. 426, O.J. 2022, C 80/1.

⁵⁰See e.g. M. Faure and R. Partain (2019) *Environmental Law and Economics*. Cambridge University Press, at 122–123; D. Driesen (2010) 'Alternatives to Regulation? Market Mechanisms and the Environment', in R. Baldwin, M. Cave, and M. Lodge (eds.), *The Oxford Handbook of Regulation*. Oxford University Press, 204–205.

⁵¹Marcu, Mehling, Cosbey, supra n. 7, at 36.

regime would 'leave exporting countries wider latitude to determine how best to address climate change in their own political and policy context', and thus result in more effective climate change action.⁵²

The carbon pricing crediting regime under the EU CBAM is commonly characterized as narrow. The literature points out how the EU CBAM ignores instruments of traditional environmental regulation, including performance standards and efficiency improvement requirements.⁵³ According to environmental law and economics theory, these 'non-price-based' instruments are an important part of the policy mix needed to drive decarbonization, despite concerns on their limited cost effectiveness.⁵⁴ By contrast, carbon pricing is commonly expected to achieve decarbonization in a more efficient way,⁵⁵ but the extent to which this market-based approach can achieve the deep decarbonization needed to address climate change remains uncertain.⁵⁶ Scholars have also expressed concerns on the 'transplantability' of direct carbon pricing, and in particular ETSs, taking into account institutional obstacles to the integration of these mechanisms.⁵⁷ By limiting its crediting regime to carbon pricing and excluding traditional regulation, the EU CBAM would thus incentivize its trading partners to opt for a climate policy option that might not be sufficiently effective in achieving decarbonization.

However, contrary to the common perception, the EU does not ignore the impact of traditional instruments of climate regulation in third countries.⁵⁸ Instead of being included as an explicit crediting option, the impact of traditional regulations, e.g. emission standards, energy efficiency improvement requirements or technology bans, is implicitly taken into account in the calculation of the embedded emissions of carbon-intensive goods.⁵⁹ Provided sufficient data are available, the importers will be able to reflect in their CBAM declaration the reduced carbon content of their goods, achieved by complying with these energy and environmental

⁵²Dominioni and Esty, supra n. 7, at 15.

⁵³See e.g. Espa and Holzer, supra n. 4, at 401; Durán, supra n. 4, at 89.

⁵⁴See e.g. D. Driesen (2015) 'Traditional Regulation's Role in Greenhouse Gas Abatement', in M. Faure (ed.), *Elgar Encyclopaedia of Environmental Law*. Edward Elgar, 415; S. Kingston, V. Heyvaert, and A. Čavoški (2017) *European Environmental Law*. Cambridge University Press, 131. See also Dolphin, Pollitt, and Newbery, supra n. 47, at 497 (arguing that 'the difficulty with which carbon pricing schemes can be introduced, together with the weakness of most existing ones continues to provide a rationale for the development of climate mitigation strategies with multiple GHGs abatement tools'). For an overview and critical discussion of 'non-price' climate mechanisms, and their comparative effectiveness with price-based tools, see R. Kohli and H. Karun (2023) *Non-Price Policies for Addressing Climate Change: The Global Experience*. Centre for Social and Economic Progress, <https://g20sfwg.org/wp-content/uploads/2023/04/Non-price-policies-for-addressing-climate-change-the-global-experience-CSEP.pdf>; J.E. Stiglitz (2019) 'Addressing Climate Change through Price and Non-price Interventions', *European Economic Review* 119, 594–612.

⁵⁵A widely held view in the climate policy debate is that carbon pricing is 'the single most powerful and economically efficient mechanism to shift demand towards lower carbon intensity, and with it investment, innovation and employment'. Stern and Lankes, supra n. 46, at 26. Similarly, see J. Stiglitz and N. Stern (2017) 'Report of the High-Level Commission on Carbon Prices', The World Bank, www.carbonpricingleadership.org/report-of-the-highlevel-commission-on-carbon-prices/ (finding that 'a well-designed carbon price is an indispensable part of a strategy for reducing emissions in an efficient way', and at the same time emphasizing the importance of 'other well-designed policies tackling various market and government failures' to complement carbon prices).

⁵⁶See e.g. E. Tvinnereim and M. Mehling (2018) 'Carbon Pricing and Deep Decarbonisation', *Energy Policy* 121, 185; Dolphin, Pollitt, and Newbery, supra n. 47, at 497.

⁵⁷See e.g. S. Bogojević (2013) 'Emissions Trading Schemes: Markets, States and Law', Hart, p. 68, on the EU ETS as 'EU-specific legal construction', 'tied to complex questions concerning power allocation that are specific to the EU'; A. Boute (2017) 'The Impossible Transplant of the EU Emissions Trading Scheme: The Challenge of Energy Market Regulation', *Transnational Environmental Law* 6, 59.

⁵⁸C. Galiffa and I.G. Bercero (2022) 'How WTO-consistent Tools Can Ensure the Decarbonization of Emission-intensive Industrial Sectors', *AJIL Unbound* 116, 196.

⁵⁹Ibid., at 198, arguing that 'by taking actual emissions into account, the EU CBAM does implicitly recognize the impact of third countries' regulatory frameworks on imports. Indeed, to comply with such frameworks, producers in third countries are required to improve the emission performance of their production, resulting in them being able to declare lower actual emissions when they export to the EU and incur a lower CBAM charge'.

regulations. As explained by Stern and Lankes, ‘carbon content measures reflect the impact of past policies on current emissions. ... The effect of non-price policies would be already accounted for by the CBAM, if those policies contributed to reducing the embedded carbon in the imported products’.⁶⁰ For instance, performance standards requiring producers to improve the efficiency of their installations usually result in lower embedded carbon emissions of the goods produced from these installations, thus decreasing the number of CBAM certificates to be surrendered for their imports. Similarly, bans on carbon-intensive technologies require producers to shift to cleaner production alternatives, reducing the CBAM burden for the goods produced from these cleaner processes.

The CBAM does thus not contradict efforts to decarbonize through traditional regulation. On the contrary, according to the European Commission, allowing CBAM declarants to demonstrate the actual emissions embedded in their goods is particularly effective in ‘incentivizing third country producers to move towards cleaner production processes’.⁶¹ Mehling and Ritz confirm that basing the CBAM on the carbon intensity of individual imports, rather than default values, provides environmental and economic benefits by ‘rewarding producers’ decarbonization efforts’.⁶²

Carbon prices also incentivize the implementation of emission reduction measures and a transition to low-carbon alternatives. However, compared to emission performance standards and technology requirements, the effect of carbon prices on the carbon intensity of production processes is less direct, and more uncertain.⁶³ In principle, with carbon taxation or emissions trading, emitters can continue to operate carbon-intensive facilities as long as they pay the carbon tax or purchase/receive sufficient carbon allowances.

3.2 Indirect Carbon Pricing Under the EU CBAM

An increasing number of jurisdictions have adopted direct carbon pricing instruments, covering 23% of global GHG emissions in 2023.⁶⁴ In the EU, the ETS is ‘a cornerstone of the EU’s policy to combat climate change and its key tool for reducing greenhouse gas emissions cost-effectively’.⁶⁵ Following the EU approach, China has established pilot ETSs and a national ETS, and other countries in the region and beyond have announced similar regulatory developments.⁶⁶ However, despite the increasing number of carbon pricing initiatives, the role of these instruments in pricing the cost of carbon associated with the production of carbon-intensive goods has so far remained limited.⁶⁷ Compared to energy taxes and other forms of indirect carbon pricing, carbon taxes and ETSs continue to cover a small share of total carbon pricing to date.⁶⁸

By focusing on carbon pricing instruments directly calculated based on GHG emissions, as part of national carbon emissions reduction schemes, the EU CBAM thus overlooks the important contribution of energy prices toward carbon pricing.⁶⁹ This approach ignores the

⁶⁰Stern and Lankes, *supra* n. 46, at 51.

⁶¹European Commission, COM(2021) 564 final (Impact Assessment).

⁶²M. Mehling and R. Ritz (2023) ‘From Theory to Practice: Determining Emissions in Traded Goods under a Border Carbon Adjustment’, *Oxford Review of Economic Policy* 39, 123, at 124 (‘relatively clean producers are now no longer disadvantaged, and efficient abatement incentives are at least partially restored in that reduction in actual carbon intensities can pay off.’)

⁶³On ‘emissions uncertainty’ in ETSs, see e.g. S. Borenstein et al. (2019) ‘Expecting the Unexpected: Emissions Uncertainty and Environmental Market Design’, *American Economic Review* 109, 3953–3977.

⁶⁴World Bank, Carbon Pricing Dashboard (2023), <https://carbonpricingdashboard.worldbank.org/>.

⁶⁵European Commission, EU Emissions Trading System (EU ETS), https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets_en.

⁶⁶World Bank, *State and Trends 2023*; Doda et al., *supra* n. 47.

⁶⁷Agnolucci et al., *supra* n. 48, at 5. See also, e.g. Dolphin, Pollitt, and Newbery, *supra* n. 47, at 497.

⁶⁸Agnolucci et al., *supra* n. 48, at 5; OECD, *Effective Carbon Rates 2021* (‘fuel excise taxes dominate effective carbon rates’).

⁶⁹See I. Espa and K. Holzer, ‘Sind klimaclubs mit dem welthandelsrecht vereinbar?’, *Die Volkswirtschaft* (10 October 2023), <https://dievolkswirtschaft.ch/de/2023/10/sind-klimaclubs-mit-dem-welthandelsrecht-vereinbar/>.

decarbonization incentives that states create through fuel excise taxes, fossil fuel subsidy reforms, and other ‘positive’ indirect carbon price signals. As explained by the OECD, similarly to carbon taxes and ETSs, fuel excise taxes ‘make each low- and zero-carbon energy more competitive by increasing the price of high-carbon alternatives, encouraging energy users to curtail their use of high carbon energy and switch to low- or zero-carbon options’.⁷⁰ Excluding indirect carbon pricing measures is particularly problematic for developing states that often do not have carbon taxes and lack the institutional capacity to implement ETSs but instead have high levels of indirect carbon pricing.⁷¹ Reciprocally, crediting other pricing instruments than direct carbon prices would ‘promise better environmental outcomes’, by leaving third countries greater discretion in determining how best to reduce emissions in their own institutional context.⁷²

At the same time, energy subsidies can weaken the signals that direct carbon prices are supposed to send to energy-intensive industries.⁷³ For the World Bank, fossil fuel subsidies ‘erode the incentive provided by positive carbon prices’.⁷⁴ Energy taxes, and other forms of energy pricing measures, can thus constitute ‘negative’ indirect carbon prices that counteract the positive signal of direct carbon pricing mechanisms.⁷⁵ Agnolucci et al. find that states often reallocate the fiscal burden of carbon prices, as broader energy tax reforms are commonly introduced in parallel with the implementation of carbon prices.⁷⁶ As energy tax and pricing measures can offset the impact of carbon prices, ‘tracking indirect pricing is important to avoid overstating the effect of direct carbon prices’.⁷⁷

The EU CBAM Regulation does not recognize the role of fossil fuel subsidies. Subsidies that counter the impact of carbon prices could in principle amount to a ‘form of compensation available in [the third] country’, to use the formulation of the CBAM Regulation,⁷⁸ and thus be taken into account in the calculation of the carbon prices paid in that country. However, as noted above, the specific requirement that the compensation must ‘have resulted in a reduction of *that* carbon price’⁷⁹ complicates this assessment. Fossil fuel subsidies limit the impact of carbon prices on energy-intensive industries, but do not directly result in a reduction of the carbon prices themselves.

3.3 Incentivizing Effective Climate Policy Under the CBAM

In sum, by allowing importers to determine their CBAM obligation based on their actual emissions, the EU implicitly recognizes the impact of traditional regulations, e.g. emission performance standards and energy efficiency improvement measures, that contribute to reducing the GHG emissions of CBAM installations. Using actual emissions, instead of default values, to determine importers’ CBAM obligations would, at least in principle, support the implementation of instruments of traditional environmental regulation in third countries. However, the EU CBAM fails to take into account both positive and negative indirect carbon price signals, despite their crucial importance for decarbonization. On the one hand, energy taxation continues to be the most important pricing measures to internalize carbon externalities. On the other hand, energy subsidies can counter the incentives of direct carbon prices.

⁷⁰OECD, *Effective Carbon Rates 2021*.

⁷¹Agnolucci et al., *supra* n. 48, 5.

⁷²Dominioni and Esty, *supra* n. 7, at 14 and 18 (‘instruments that implicitly price GHGs, moreover, may better fit national needs and political circumstances’).

⁷³Agnolucci et al., *supra* n. 48, 5.

⁷⁴World Bank, *State and Trends 2023*, at 18.

⁷⁵*Ibid.*, at 18; World Bank, *State and Trends 2022*, at 13.

⁷⁶Agnolucci et al., *supra* n. 48, at 3 and 5.

⁷⁷*Ibid.*, at 5.

⁷⁸Article 9, Regulation (EU) 2023/956.

⁷⁹*Ibid.* (emphasis added).

4. Crediting Methodologies

The EU justifies its focus on direct carbon pricing, as only an explicit crediting option, based on administrative reasons.⁸⁰ A number of scholars agree that crediting a broader range of regulatory instruments would expose the CBAM to significant administrative complexity.⁸¹ However, existing calculation methods of energy subsidies, and more generally of indirect carbon prices, would allow the EU to expand the scope of its crediting mechanism to take into account effective carbon prices instead of limiting it to direct carbon pricing.⁸²

4.1 Administrative Challenges to the Crediting of Traditional Regulation

Achieving emission reductions in compliance with traditional regulation can require significant costs, often above the price of carbon in ETs.⁸³ These costs are currently not accounted for in the design of the EU CBAM. To justify the exclusion of other climate regulations from the CBAM crediting mechanism, the European Commission emphasized the ‘conceptual difficulties in determining the equivalence between carbon pricing and non-price regulatory measures’.⁸⁴ Analysts generally agree with the administrative complexity involved with the crediting of non-pricing measures.⁸⁵ Marcu, Mehling, and Cosbey emphasize the administrative challenges associated with the calculation of the per-tonne cost impact of regulations such as coal phase-outs or performance standards, and conclude that ‘the administratively simpler choice would be to credit only for carbon pricing policies’.⁸⁶ Similarly, Dominioni and Esty point out the difficulty in establishing benchmarks and determining the marginal cost of non-pricing policies, as well as the complexity in gathering the relevant data on climate-related policies implemented abroad.⁸⁷ Determining the carbon price equivalence of these policies would generate disputes, e.g. on the methodologies used to assess equivalence.⁸⁸ In the same vein, Stern and Lankes explain that it can be very difficult to identify the relevant policies necessary to calculate carbon price equivalence, as a large number of non-climate policies (e.g. local air pollution requirements) can have the indirect effect of reducing GHG emissions.⁸⁹ They also refer to the difficulty of estimating the abatement impact of each policy, and in determining the right baseline based on which the GHG emission reductions have to be measured.⁹⁰ For Agnolucci et al., attempts to categorize non-pricing instruments as equivalent to carbon pricing ‘would both misrepresent

⁸⁰European Commission, COM(2021) 564 final (Impact Assessment).

⁸¹See e.g. I. Espa, J. Francois, and H. van Asselt (2022) ‘The EU Proposal for a Carbon Border Adjustment Mechanism (CBAM): An Analysis under WTO and Climate Change Law’, *Oil, Energy, and Gas Law* 20, 1, at 25; Marcu et al., supra n. 8, at 5.

⁸²See Dominioni and Esty, supra n. 7, at 25–29.

⁸³See e.g. Borenstein et al., at 3959 (finding that the ‘reductions [achieved by non-market environmental policies] are not costless; indeed, many are likely to have abatement costs per tonne of GHG emissions greater than the allowance price’); OECD, *Effective Carbon Rates 2016*, at 24 (confirming that non-market instruments of emission reduction ‘put implicit prices on carbon, as they induce costly abatement’).

⁸⁴European Commission, COM(2021) 564 final (Impact Assessment).

⁸⁵See e.g. Espa, Francois, and van Asselt, supra n. 81, at 25 (‘crediting other policies [than carbon pricing systems] will be very difficult administratively’).

⁸⁶Marcu, Mehling, and Cosbey, supra n. 7, at 37–38 (‘keeping abreast of all such regulatory policies across a number of trading partner countries, and calculating their cost impacts, would be administratively challenging’).

⁸⁷Dominioni and Esty, supra n. 7, at 12 (on the difficulty of ‘estimat[ing] the GHG price equivalence of a very diverse set of climate change policies, some of which may not be easy to quantify’).

⁸⁸Ibid. See also E. Lydgate (2023) ‘Climate Equivalence and International Trade’, *World Trade Review* 22, 484, at 492; and P. Leturcq (2022) ‘The European Carbon Border Adjustment Mechanism and the path to Sustainable Trade Policies: From “Coexistence” to “Cooperation”’, *Cambridge Yearbook of European Legal Studies* 24, 67 (arguing that crediting non-price policies would create a risk of discrimination of the EU’s trading partners taking into account the technical and administrative challenges associated with determining the carbon price equivalence of these policies).

⁸⁹Stern and Lankes, supra n. 46, at 52. See also Marcu, Mehling, and Cosbey, supra n. 7, at 37–38.

⁹⁰Stern and Lankes, supra n. 46, at 52.

incentives and undervalue their primary role as complementary policies to help decarbonize economies'.⁹¹ More generally, scholarly analyses of regulators' attempts to estimate the cost of environmental regulation, e.g. air pollution measures, point to the 'lack of comprehensive data on the costs of treatment technologies', and important discrepancies between regulators' ex-ante cost estimates and actual costs.⁹² There are thus clear methodological challenges to the integration of traditional regulation in CBAM crediting mechanisms.

The EU CBAM avoids these methodological challenges by basing the calculation of importers' CBAM obligations on the actual emissions embedded in their goods. This design choice allows CBAM declarants to reflect the impact of traditional regulation in third countries on the emissions of the relevant production installations, without having to determine the abatement impact or carbon price equivalence of each regulatory instrument. As seen above (section 3.1), under a CBAM that charges border carbon prices on the actual embedded carbon, the impact of traditional environmental regulation is accounted for if this regulation 'contributed to reducing the embedded carbon in the imported products'.⁹³

The calculation of actual emissions, and their verification, generates its own administrative complexities.⁹⁴ For instance, the Conference Board warned in 2023 that a lack of expertise in the verification of GHG emissions could result in bottlenecks for importers.⁹⁵ At the same time, reflecting the impact of traditional regulation through the calculation of embedded emissions does not do justice to the total cost of the emission reduction measures adopted to comply with these measures.⁹⁶ Although the EU CBAM Regulation and the Commission Implementing Regulation do not fully reflect the implicit costs associated with these abatement measures, the significant methodological complexity to determine the carbon price equivalence of traditional regulation justifies this choice. Existing initiatives to measure 'effective carbon rates', discussed in the next section, do not include traditional regulation in the selection of policy instruments on which the calculations of these metrics are based.

4.2 Methods to Calculate Indirect Carbon Pricing

Compared to non-pricing measures, it is administratively easier to adjust importers' CBAM obligations for pricing mechanisms, such as energy excise taxes and fossil subsidy reforms that effectively increase the production cost of carbon-intensive goods. Dominioni and Esty point out that many states have accumulated considerable experience with the assessment of foreign subsidies to identify unfair trade practices, and accordingly 'the administrative complexity of effective BCA mechanisms need not be seen as an insurmountable hurdle to BCA calculations based on effective GHG pricing'.⁹⁷

Besides the assessment of foreign subsidies by national authorities, international economic organizations have developed relevant methods of calculation of indirect carbon prices. The OECD estimates the 'effective carbon rates' for 71 OECD and G20 countries, determining how

⁹¹Agnolucci et al., supra n. 48, at 7.

⁹²See C. Morgan et al. (2023) 'Estimating the Cost of Environmental Regulations and Technological Change with Limited Information', *Ecological Economics* 204, 107550. For an example of national assessment of the cost of air pollution regulation, see United States Environmental Protection Agency, 'Regulatory Impact Analyses for Air Pollution Regulations', www.epa.gov/economic-and-cost-analysis-air-pollution-regulations/regulatory-impact-analyses-air-pollution.

⁹³Stern and Lankes, supra n. 46, at 51.

⁹⁴Mehling and Ritz, supra n. 62, at 132 (arguing that requiring importers to declare actual embedded emissions 'increases the administrative burden on EU customs authorities and foreign producers, however, and incurs a risk of resource shuffling').

⁹⁵The Conference Board, 'Navigating Europe's Carbon Tariff: What Is CBAM and What Does It Mean for Business?' (2023), www.conference-board.org/pdfdownload.cfm?masterProductID=49081. See also Alice Hancock and Andy Bounds, 'Business Braced for Red Tape from EU Carbon Border Tax' (28 September 2023) *Financial Times*, <https://www.ft.com/content/77694fd0-f0d4-4d96-856f-e0998beb59d9>.

⁹⁶Espa and Holzer, supra n. 4, at 401.

⁹⁷Dominioni and Esty, supra n. 7, at 26, 29.

these countries price GHG emissions in e.g. the industry and electricity sectors through fuel excise taxes, carbon taxes, and carbon allowances under ETSS.⁹⁸ For fuel excise taxes, the tax base is defined in direct proportion to the GHG emissions associated with energy units (e.g. tonnes of coal). This methodology allows the OECD to determine a ‘carbon price gap’, reflecting the extent to which effective carbon rates fall short of a reference carbon price.⁹⁹ The OECD’s work shows that methods are available to calculate the pricing of carbon beyond direct carbon pricing instruments, and on this basis to determine the gap with reference carbon prices.

A 2023 OECD study complements this metric by estimating ‘net effective carbon rates’, i.e. effective carbon rates net of pre-tax support for fossil fuels. This methodology can be used to calculate fossil subsidies against external carbon pricing benchmarks and allows for comparisons across countries.¹⁰⁰ In parallel, a 2023 study for the World Bank proposed a methodology for ‘Measuring Total Carbon Pricing’ that includes all pricing instruments that affect how fuel prices reflect carbon externalities (fuel excise taxes, fuel subsidies, and VAT deviations), irrespective of the stated objective of these measures.¹⁰¹ In parallel, the IMF calculates fossil fuel subsidies on a yearly basis for a large number of countries, including direct support to producers and state measures keeping retail prices below their supply cost (determined based on the opportunity cost of consuming energy products domestically instead of selling them abroad).¹⁰² The OECD ‘net effective carbon rates’, World Bank methodology on ‘Measuring Total Carbon Pricing’, and IMF assessment of fossil subsidies show that it is possible to assess the extent to which states compensate their industry for the impact of direct carbon prices.

5. Non Discrimination

A significant body of literature has examined the application of international trade law to border carbon adjustments, and raised concerns on the compatibility of strict crediting mechanisms with the GATT. More recently, analyses of the EU CBAM have pointed out how the carbon price reduction and linking exemption could amount to a discrimination in breach of the GATT, and warned about the challenges facing their justification under the general exception regime of the GATT.¹⁰³ The limitation of the CBAM crediting mechanism to direct carbon pricing, and the exemption of ETSS linked to the EU system, is generally seen as a determining element of its discriminatory nature. Reciprocally, broadening the crediting mechanism to integrate indirect carbon pricing would likely contribute to the compatibility of the CBAM with WTO law, taking into account that traditional regulation is already implicitly recognized in the design of the CBAM.

5.1 Most Favored Nation and National Treatment

The EU decision to exempt countries linked to and integrated in the EU ETS from the CBAM could be difficult to reconcile with the Most Favored Nation standard (MFN) under Article I GATT, requiring that any advantage granted to products from any country shall also be accorded to like products from all other WTO parties. For Venzke and Vidigal, ‘it is clear that CBAM offers an advantage (not having to purchase emission allowances) to products imported from some countries (those who have an EU-equivalent and EU-approved ETS) that is not accorded immediately and unconditionally to like products from other countries’.¹⁰⁴ Similarly, Marín Durán argues that, although in theory other countries could join this list by linking their ETS with the EU system based on origin neutral conditions, the CBAM exemption regime ‘may lead to

⁹⁸OECD, *Effective Carbon Rates 2023*, <https://stats.oecd.org/?datasetcode=ecr>. See also OECD, *Effective Carbon Rates 2021*.

⁹⁹OECD, *Effective Carbon Rates 2016*, at 24.

¹⁰⁰G. Garsous et al. (2023) ‘Net Effective Carbon Rates’, www.oecd.org/tax/net-effective-carbon-rates-279e049e-en.htm.

¹⁰¹Agnolucci et al., supra n. 48.

¹⁰²See IMF, *Fossil Fuel Subsidies*, www.imf.org/en/Topics/climate-change/energy-subsidies.

¹⁰³See Venzke and Vidigal, supra n. 4, at 207; M. Durán, supra n. 4, at 92; Espa and Holzer, supra n. 4, at 398.

¹⁰⁴Venzke and Vidigal, supra n. 4, at 207.

a *de facto* MFN claim if those conditions have a detrimental impact on the competitive opportunities for like imported products'.¹⁰⁵ Espa and Holzer agree that the CBAM exemption regime is '*de facto* country-based' and is thus likely to run counter the MFN obligation of the GATT.¹⁰⁶

Trade law analyses of the EU CBAM have also emphasized how the crediting of carbon pricing instruments, and not other climate regulations, could breach the requirement of national treatment, prohibiting the discriminatory treatment between imports and 'like' domestic products. The option to reduce the CBAM burden by paying carbon prices in the country of origin is equally available to all WTO members. However, for Venzke and Vidigal, the specificity of this requirement might be seen as discriminatory, 'in that it requires producing countries to have a system involving monetary payments, thus excluding regulatory mechanisms for reducing carbon emissions ... that do not involve any monetary payments'.¹⁰⁷ Similarly, Espa and Holzer consider that the exclusion of climate regulations other than carbon pricing from the CBAM crediting regime could be incompatible with the national treatment principle, as foreign producers that are subject to traditional regulation approaches may be exposed to a double carbon cost (in the EU and implicitly in their country of origin).¹⁰⁸ To summarize the literature, by formally limiting the crediting option to carbon pricing in third countries, and exempting specific countries, the EU CBAM is likely to be found incompatible with the non-discriminatory requirements of the GATT, and will therefore have to be justified under GATT Article XX.¹⁰⁹

5.2 Environmental Exception

It would be relatively straightforward for the EU to argue that the EU CBAM is 'necessary to protect human, animal or plant life or health' or 'relating to the conservation of exhaustible natural resources', under the environmental exceptions of the GATT (Article XX(b) and (g)).¹¹⁰ However, scholarly analyses emphasize the likely tension of the carbon pricing crediting mechanism with the non-discrimination requirement of the 'Chapeau' of Article XX, requiring that measures shall not be 'applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail'. In principle, the differentiation inherent to the carbon pricing exception can be explained based on the objective of addressing the risk of carbon leakage to jurisdictions that do not impose any, or a sufficient, price on carbon emissions.¹¹¹ By seeking to level the playing field between imports and domestic products, the CBAM can be seen as a 'reliable safeguard against carbon leakage'.¹¹² However, crediting carbon pricing and no other climate policies would be more difficult to justify under the flexibility required from WTO members under the Chapeau of Article XX GATT.¹¹³

In *US-Shrimp*, the WTO Appellate Body ruled that measures must be applied with 'sufficient flexibility to take into account the specific conditions prevailing in any exporting Member'.¹¹⁴ The implementing country can require measures 'comparable in effectiveness' to its domestic program, but it cannot impose on other members 'essentially the same comprehensive regulatory

¹⁰⁵Durán, supra n. 4, at 92, based on Appellate Body Report, *European Communities – Measures Prohibiting the Importation and Marketing of Seal Products*, WT/DS400/DS401/AB/R, adopted 18 June 2014, para. 5.87.

¹⁰⁶Espa and Holzer, supra n. 4, at 398, noting that 'truly origin-neutral conditions, such as carbon footprint of products, might be found to be permissible for derogation under the most-favored nation clause', based on Panel Report, *Canada – Certain Measures Affecting the Automotive Industry*, WT/DS139/R, adopted 11 February 2000, para. 10.25.

¹⁰⁷Venzke and Vidigal, supra n. 4, at 208.

¹⁰⁸Espa and Holzer, supra n. 4, at 398.

¹⁰⁹Venzke and Vidigal, supra n. 4, at 208–216.

¹¹⁰Ibid, at 209–211.

¹¹¹Ibid, at 212–217.

¹¹²Espa and Holzer, supra n. 4, at 399.

¹¹³Ibid, at 399.

¹¹⁴Appellate Body Report, *United States – Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R, 6 November 1998, para. 149.

program ... without taking into consideration different conditions which may occur' in other countries.¹¹⁵ For Marín Durán, the flexibility requirement in *US–Shrimp* 'could be used to challenge the EU-led carbon club exemption currently found in the CBAM, which could be seen as the EU using its market power to compel other WTO members into adopting essentially the same carbon pricing policies'.¹¹⁶ Espa and Holzer agree that 'not considering third countries' measures when different from an ETS or a carbon tax, may likely create grounds for accusation of arbitrariness, which goes contrary to the requirements of the Chapeau of Article XX GATT', as defined in *US–Shrimp*.¹¹⁷ Similarly, Venzke and Vidigal point out the challenge of reconciling the EU requirement that third countries use the same mechanism as the EU (i.e. carbon pricing) with GATT Article XX.¹¹⁸

However, to determine whether the CBAM discriminates against countries without carbon pricing, it is insufficient to limit the legal analysis to the crediting mechanism, as this ignores the implicit recognition of traditional regulation in the calculation of embedded emissions.¹¹⁹ Importers calculate their CBAM obligation based on actual emissions, and will thus benefit from the emission reductions achieved to comply with performance standards, technology bans, and energy saving requirements through a lower CBAM burden. According to Espa and Holzer, and Marín Durán, this approach still raises concerns of discrimination, as it does not reflect all implicit costs incurred by producers to comply with traditional regulation.¹²⁰

However, the exclusion of instruments of traditional regulation from the existing methodologies on 'effective carbon rates' (or 'total carbon pricing') provides a strong justification for the EU choice not to directly credit the implicit cost of these measures. In *US–Gasoline*, the Panel and the Appellate Body rejected the administrative difficulties invoked by the US to justify more restrictive baseline requirements for foreign refiners under the non-discrimination test of Article XX (Chapeau).¹²¹ There were 'reasonably available' alternative measures,¹²² 'established techniques ... which in many contexts are accepted as adequate to permit international trade – trade between territorial sovereigns – to go on and grow'.¹²³ By contrast, in the field of climate regulation, techniques to calculate the carbon-cost equivalence of non-pricing measures are currently not 'reasonably available' and sufficiently established. In their study on 'Measuring Total Carbon Pricing' for the World Bank, Agnolucci et al. explicitly exclude non-pricing instruments from the scope of their metric.¹²⁴ Benson et al. confirm that 'there is not an accepted methodology for converting the mixture of incentives, standards, and federal investments ... into a total cost of carbon for products'.¹²⁵ Pending the development of 'established techniques' to calculate the carbon-cost equivalence of instruments of traditional regulation,¹²⁶ limiting the CBAM

¹¹⁵Ibid, para. 144, 164.

¹¹⁶Durán, supra n. 4, at 97.

¹¹⁷Espa and Holzer, supra n. 4, at 400.

¹¹⁸Venzke and Vidigal, supra n. 4, at 213.

¹¹⁹The EU opted for actual emissions to help shield the CBAM against claims before the WTO. See European Commission, COM(2021) 564 final (Explanatory Memorandum). On the legal advantage of using actual emissions instead of default values, see also Mehling and Ritz, supra n. 62, at 124.

¹²⁰Espa and Holzer, supra n. 4, at 402; Durán, supra n. 4, at 89.

¹²¹Appellate Body Report, *United States – Standards for Reformulated and Conventional Gasoline*, W T/DS2/AB/R (adopted May 20, 1996), at 27.

¹²²Panel Report, *US–Gasoline* (adopted on 20 May 1996), para. 6.28. On the relevance under the Chapeau of 'reasonably available' alternative measures that are less discriminatory, see L. Bartels (2015) 'The Chapeau of the General Exceptions in the WTO GATT and GATS Agreements: A Reconstruction', *American Journal of International Law* 109, 95, at 118.

¹²³Appellate Body Report, *US–Gasoline*, at 27.

¹²⁴Agnolucci et al. supra n. 48, at 6.

¹²⁵Benson et al., supra n. 28, at 7. On the absence of a 'standard methodology' to calculate the carbon cost of alternative policies, see also, e.g., Espa, Francois, and van Asselt, supra n. 81, at 25.

¹²⁶See also Dominioni and Esty, supra n. 7, at 12 (arguing that 'future methodological innovations may allow overcoming these barriers, but, for now, the wide-open approach is too problematic to be adopted').

crediting mechanism to pricing measures should not be seen as an arbitrary and unjustifiable discrimination under Article XX (chapeau).

At the same time, existing methodologies confirm the possibility to measure indirect carbon pricing, and incorporate the impact of these instruments in the calculation of effective carbon rates. Similarly to *US-Gasoline*, excluding indirect carbon pricing from the CBAM crediting mechanism could be found discriminatory, given the availability of ‘established techniques’ to calculate the carbon-cost equivalence of these pricing measures.

Limiting the crediting to pricing measures that ‘mimic the behavior (i.e. have similar characteristics) of the EU ETS’, as suggested by Marcu et al.,¹²⁷ would not be compatible with the flexibility required under Article XX (chapeau). As ruled in *US-Shrimp*, arbitrary discrimination can result from measures imposing ‘a single, rigid and unbending requirement that countries ... adopt a comprehensive regulatory program that is essentially the same as the [domestic] program’.¹²⁸ A government can adopt ‘a single standard applicable to all its citizens throughout that country’, but it cannot unilaterally impose the same standard on other WTO members, ‘without taking into consideration different conditions which may occur in the territories of those other Members’.¹²⁹ Applied to the CBAM, this reasoning would mean that the EU cannot seek to influence other WTO members to adopt the same direct carbon pricing program as that imposed by the EU to its industry.¹³⁰

Instead, extending the CBAM crediting mechanism to indirect carbon pricing instruments is necessary to reduce the risk of discrimination, and facilitate its justification under the GATT.¹³¹ Taking into account the objective of equalizing the carbon cost of domestic and foreign producers, indirect carbon pricing in the EU would also have to be reflected in the design of the CBAM crediting mechanism.¹³² Importers’ CBAM obligation should not be reduced based on the total (direct and indirect) carbon prices paid in the country of origin, but based on the difference between these total carbon prices and those paid for comparable goods in the EU.

5.3 WTO Compatibility of the EU Carbon Pricing Crediting Mechanism?

In sum, trade law analyses of the EU CBAM have warned that, as the mechanism does not credit other climate policies than direct carbon pricing, it is likely to be found incompatible with the GATT. Compliance with instruments of traditional environmental regulation and the use of indirect carbon prices can generate costs that can equal or exceed the cost of carbon under an ETS or carbon tax. By ignoring these measures, the CBAM would impose on third countries ‘essentially the same comprehensive regulatory program’ as the EU ETS, without taking into consideration the economic and regulatory characteristics of these countries.

This criticism is valid regarding the lack of consideration of indirect carbon pricing measures under the CBAM crediting mechanism. In the absence of major methodological obstacles, the failure to recognize pricing instruments other than direct carbon pricing could fall short of the flexibility expected from WTO members under the general exception of the GATT (Article

¹²⁷Marcu et al., supra n. 8, at 6–8 (proposing a ‘test of symmetry to the EU ETS’ as criteria to determine the eligibility of carbon prices in third countries under the CBAM crediting mechanism).

¹²⁸Appellate Body Report, *US-Shrimp*, para. 177.

¹²⁹Ibid, para. 164.

¹³⁰On the objective of the EU to export its carbon pricing approach to third countries, see e.g. A. Pirlot (2022) ‘Carbon Border Adjustment Measures: A Straightforward Multi-purpose Climate Change Instrument?’, *Journal of Environmental Law* 34, 25, at 33–34.

¹³¹See Dominioni and Esty, supra n. 7, at 34, 36, and 40 (arguing that crediting indirect carbon prices is less likely to amount to a *de facto* discriminatory, compared with a mechanism that only credits explicit carbon prices, because the former accounts for a broader set of climate-related mechanisms and ‘does not dictate how [emission reduction] standards are to be met’).

¹³²Espa, Francois, and van Asselt, supra n. 81, at 25.

XX, Chapeau). By contrast, the CBAM does take into account non-price measures in the calculation of embedded emissions. Although this approach does not fully reflect all implicit costs associated with instruments of traditional regulation, the exclusion of these costs from the leading calculation methods of effective carbon rates provides support to the EU approach, and the justifiability of the CBAM under Article XX GATT.

6. Differentiation

The equalization of carbon costs that is at the center of the EU CBAM and its carbon pricing crediting mechanism raises questions of compatibility with the principle of Common But Differentiated Responsibilities and Respective Capabilities (CBDRRC). All countries ‘should protect the climate system ... on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities’.¹³³ The Paris Agreement aims to ‘strengthen the global response to the threat of climate change’, a common concern of humankind, but developed countries should take the lead in reducing GHG emissions.¹³⁴ Developing countries ‘should continue enhancing their mitigation efforts’, and the least developed countries and small island developing States ‘may prepare and communicate strategies, plans and actions for low greenhouse gas emissions development’.¹³⁵

Although the European Commission refers to the principle of CBDRRC in its CBAM Proposal, the Regulation does not treat developing and least developed countries differently from the developed economies that have a greater responsibility and capacity to address climate change. Instead, all focus is on ensuring the ‘equal treatment for products made in the EU and imports from elsewhere’,¹³⁶ and in particular ensuring that imports into the Union are on ‘equal footing’ with EU products in terms of carbon pricing.¹³⁷ For Marín Durán, incentivizing all exporting countries to the EU, including the least developed countries, to reduce their GHG emissions and implement carbon pricing mechanisms is at odds with the CBDRRC principle as operationalized under the Paris Agreement.¹³⁸ By failing to credit other emission reduction mechanisms than carbon pricing, the EU CBAM would also contradict states’ right to determine their preferred decarbonization policy, following the bottom-up approach governing the Paris Agreement.¹³⁹ The Paris Agreement does not prescribe carbon-pricing mechanisms over other regulatory approaches.¹⁴⁰

The EU acknowledges that the CBAM is a ‘climate tool to push third countries to adopt more stringent climate measures’.¹⁴¹ The CBAM is part of the EU’s efforts to ‘pave the way for a global carbon pricing framework’.¹⁴² Incentivizing, and even pressuring, trading partners to accelerate their decarbonization and adopt more ambitious climate policies is part of the objectives commonly associated with border carbon adjustments. For Pauwelyn, for instance, CBAMs

¹³³Article 3.1 UNFCCC; Article 2.2 Paris Agreement. On CBDRRC, see e.g. C. Voigt and F. Ferreira (2016) ‘“Dynamic Differentiation”: The Principles of CBDR-RC, Progression and Highest Possible Ambition in the Paris Agreement’, *Transnational Environmental Law* 5, 285.

¹³⁴Articles 2.1 and 4.4, Paris Agreement.

¹³⁵Ibid, Article 4.4 and 4.6.

¹³⁶Emphasis added. European Commission, Carbon Border Adjustment Mechanism: Questions and Answers (14 July 2021), https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_3661.

¹³⁷European Commission, COM(2021) 564 final.

¹³⁸Durán, supra n. 4, at 88.

¹³⁹Ibid, at 89; Espa and Holzer, supra n. 4, at 401. On the ‘bottom-up’ approach governing the Paris Agreement, see e.g. D. Bodansky (2016) ‘The Paris Climate Change Agreement: A New Hope?’, *American Journal of International Law* 110, 288, at 289.

¹⁴⁰Espa and Holzer, supra n. 4, at 401; Durán, supra n. 4, at 89 (referring to the freedom of the parties under the Paris Agreement ‘to decide for themselves whether or not to adopt carbon pricing instruments when implementing their NDCs’).

¹⁴¹European Commission, COM(2021) 564 final (Impact Assessment).

¹⁴²Recital 72, Regulation (EU) 2023/956.

‘offer an incentive for other countries to join international efforts to cut emissions’.¹⁴³ According to Mehling et al., these mechanisms can be a tool to ‘exert political pressure on climate laggards, as they can be used as a lever to induce climate action of trade partners’.¹⁴⁴ More specifically, an importing state can seek to influence the type of climate policy adopted by its trading partners, and ‘make them follow the lead of the implementing country’.¹⁴⁵ For Pirlot, the design of the EU CBAM confirms that this mechanism is mainly driven by the exercise of international climate leadership, and ‘making all countries adopt a carbon price as ambitious as the EU carbon price’.¹⁴⁶ The EU aims to act as ‘global standard setter’ in relation to climate policy and uses its market power to this effect.¹⁴⁷ With the CBAM, it unilaterally imposes on third countries its carbon price, based on the principle of ‘close correlation to the EU ETS’, and reduces this obligation if third countries adopt a comparable instrument.¹⁴⁸ This ‘contingent unilateralism’, as conceptualized by Scott and Rajamani, is difficult to reconcile with the principle of CBDRRRC under international climate law.¹⁴⁹ It also risks undermining the legitimacy of the CBAM, if it is perceived as a form of ‘regulatory imperialism’.¹⁵⁰

The contribution to the EU budget of revenues generated from imports from developing countries further exacerbates the tension of the CBAM with the Paris Agreement. According to Marín Durán, ‘the suggestion that revenue earned from pricing emissions produced in developing countries would be used to subsidize a “greener” recovery plan in the EU fundamentally subverts the Paris burden-sharing arrangements and ought to be seriously reconsidered’.¹⁵¹ Similarly, Leturcq identifies the fair redistribution of revenues generated by the EU CBAM as one of the most important solidarity issues of this mechanism under the CBDR principle.¹⁵² To remediate this inequity, scholars argue in favor of a redistribution of CBAM revenues to developing countries to support the decarbonization of their manufacturing industries.¹⁵³

The difficulty for the EU is that the equalization of carbon costs is necessary to preserve the effectiveness of the CBAM as a carbon leakage measure, and is thus a corollary to the EU’s increased climate ambition, in line with the leadership it is expected to demonstrate under the principle of CBDRRRC.¹⁵⁴ At the same time, when granting exemptions or discounts, the EU cannot ignore the differentiated responsibilities of developing and least developed countries, and

¹⁴³J. Pauwelyn (2013) ‘Carbon Leakage Measures and Border Tax Adjustments under WTO Law’, in G. van Calster and D. Prévost (eds.), *Research Handbook on Environment, Health and the WTO*. Edward Elgar, 448. Similarly, Dominioni and Esty, supra n. 7, at 15, understand the objective of these mechanisms as aiming in part to incentivize trading partners to increase the level of ambition of their climate policies to reduce the burden of CBAM on their exports.

¹⁴⁴M. Mehling et al. (2019) ‘Designing Border Carbon Adjustments for Enhanced Climate Action’, *American Journal of International Law* 113, 433, at 441.

¹⁴⁵Pirlot, supra n. 129, at 33–34.

¹⁴⁶Ibid, at 46.

¹⁴⁷European Parliament Resolution of 10 March 2021 towards a WTO-compatible EU Carbon Border Adjustment Mechanism (2020/2043(INI), www.europarl.europa.eu/doceo/document/TA-9-2021-0071_EN.html (acknowledging that ‘trade can be an important tool to promote sustainable development, and help fight climate change. The EU’s single market is the world’s second-largest consumer market, putting the Union in a unique position as a global standard setter’).

¹⁴⁸European Commission, COM(2021) 564 final, at 8–9.

¹⁴⁹J. Scott and L. Rajamani (2012) ‘EU Climate Change Unilateralism’, *European Journal of International Law* 23, 469.

¹⁵⁰See A. Bradford (2020) *The Brussels Effect: How the European Union Rules the World*. Oxford University Press, at 250 (arguing that ‘even if the EU’s efforts to generate global action against climate change were driven by its benevolent motives, the EU may be accused of acting as a regulatory imperialist that is imposing unjustified costs on other nations, in particular developing countries’).

¹⁵¹Durán, supra n. 4, at 90.

¹⁵²Leturcq, supra n. 88, at 83.

¹⁵³Durán, supra n. 4, at 90; Mehling et al., supra n. 143, 478–479. See also Pirlot, at 45. More generally, see Scott and Rajamani, supra 148, at 492 (on redistributing to developing countries the aviation-ETS revenues derived from developing countries).

¹⁵⁴For Durán, supra n. 4, at 84–85, the CBDRRRC principle creates a dilemma for the EU CBAM. On the one hand, the EU’s greater financial and technical capacity requires it to take the lead in the reduction of GHG emissions. This higher level of ambition of the EU’s domestic emission reduction efforts creates a risk of carbon leakage which the CBAM seeks to

their differentiated capacity to implement carbon pricing. However, differentiating between countries regarding the conditions governing the crediting of climate policies, and the reinvestment of CBAM revenues, could potentially be difficult to reconcile with WTO law.¹⁵⁵ Furthermore, reinvesting CBAM revenues in third countries could impose a significant administrative burden on the EU and its partners and negatively impact on the effectiveness of the CBAM to address carbon leakage.¹⁵⁶

Extending the scope of the CBAM crediting mechanism to indirect carbon prices would help align the EU CBAM with international climate law, by recognizing a broader range of climate policies, in line with the bottom-up approach of the Paris Agreement. A broader crediting regime would also help address the criticism of regulatory imperialism that currently affects the legitimacy of the CBAM, and the EU external climate policy more generally. As argued above (section 3.1), traditional regulation is already indirectly recognized in the design of the CBAM, in particular in the calculation of embedded emissions. This is important from an international climate law perspective, as traditional regulation is expected to play a more important role in developing countries.¹⁵⁷

Besides indirect carbon pricing, the CBAM should account for carbon crediting (or ‘offset’) mechanisms in third countries, provided they comply with sufficiently strict integrity standards.¹⁵⁸ From a carbon leakage perspective, offset credits ‘represent a visible price and an effective payment (cost) that the exporter has incurred in a climate regime’, and thus contribute to equalizing carbon costs.¹⁵⁹ At the same time, extending the CBAM to crediting mechanisms would allow third countries to reinvest carbon pricing revenues in the decarbonization of their industry, thus providing a more straightforward alternative to the redistribution of CBAM revenues to developing countries.

7. Conclusion

The crediting of foreign GHG emission reduction efforts is a critical element in the design of CBAMs, with potentially important implications for the effectiveness of climate policies in third countries and the compatibility of CBAMs with international trade and climate law. The EU opted for a narrow crediting mechanism, limited to direct carbon pricing instruments (carbon taxes and ETSs) and thus excluding indirect carbon pricing (e.g. fuel excise taxes), and the implied costs of traditional climate regulations (e.g. performance standards). Crediting direct carbon pricing abroad is essential to avoid CBAM declarants paying twice for the GHG emissions embedded in their goods, and thus avoid penalizing exporting countries with carbon taxes or an ETS in place.

However, for critics of the EU CBAM, excluding other mechanisms than direct carbon pricing is discriminatory, and thus unjustifiable under WTO law, inequitable, and incompatible with the differentiation required under international climate law. With its narrow crediting approach, the EU would also incentivize, or pressure, its trading partners, to adopt a climate policy instrument that does not necessarily fit their institutional environment, in particular in developing countries characterized with weaker administrative capacity. The EU’s international climate leadership and pursuit of external regulatory influence would thus potentially be at the expense of effective climate regulation abroad.

address. On the other hand, the EU must respect the differentiated responsibilities and capabilities of countries with regards to global climate change mitigation efforts.

¹⁵⁵See e.g. Venzke and Vidigal, *supra* n. 4, at 188–223. According to Durán, *supra* n. 4, at 103, ‘CBDRRC-grounded differentiation is permissible under WTO law’.

¹⁵⁶See e.g. J. Zhong and J. Pei (2023) ‘Carbon Border Adjustment Mechanism: A Systematic Literature Review of the Latest Developments’, *Climate Policy*, at 12, DOI: 10.1080/14693062.2023.2190074.

¹⁵⁷See e.g. D. Finon (2019) ‘Carbon Policy in Developing Countries: Giving Priority to Non-price Instruments’, *Energy Policy* 132, 38–43.

¹⁵⁸On ‘offset credits’ under the EU CBAM, see Marcu et al., *supra* n. 8, at 7–9.

¹⁵⁹*Ibid.*, at 8.

This criticism is important to understand the difficulty of designing CBAM crediting mechanisms that comply with international trade and climate law, and that incentivize effective climate policy in third countries. However, it does not sufficiently take into account how the EU CBAM implicitly integrates the impact of alternative mechanisms of climate regulation, e.g. emission performance standards, through the calculation of the actual emissions embedded in goods. Goods produced under strict emission standards, but without carbon pricing, will not be entitled to a carbon price reduction, but will benefit from a lower CBAM burden, reflecting the actual emission reductions achieved in compliance of these standards. The EU thus maintains an incentive for its trading partners to lower the CBAM burden of their manufacturing industry through traditional regulation.

This analysis can help justify the EU CBAM, and its carbon price crediting mechanism, under the general exception of the GATT. The CBAM does not impose on third countries ‘essentially the same comprehensive regulatory program’ as the EU ETS, as it takes into account carbon taxes and, implicitly, traditional regulation. Although this arrangement does not fully equalize the implicit cost of complying with instruments of traditional regulation with the EU carbon cost, methodological constraints justify this approach. The exclusion of traditional regulation from the main methodologies on the calculation of effective carbon rates provides a convincing justification for the decision not to credit these regulatory instruments, and instead take into account their impact through the calculation of actual emissions. Similarly, by implicitly taking into account traditional regulation in third countries, the EU respects states’ right to determine their national climate change mitigation strategy following the bottom-up approach of the Paris Agreement.

By contrast, the EU decision not to credit indirect carbon pricing instruments excludes the bulk of effective carbon pricing efforts worldwide, as fuel excise taxes and other energy pricing tools continue to represent by far the largest share of global carbon pricing. There is no administrative justification for this exclusion, as methodologies have been developed to assess total carbon pricing, including direct and indirect instruments. This decision is thus more likely to be found discriminatory, and thus incompatible with international trade law. As developing countries continue to rely predominantly on indirect carbon pricing, the narrow EU crediting mechanism penalizes them, instead of taking into account their differentiated responsibilities and capabilities as required under international climate law. Failing to recognize indirect pricing could undermine effective climate policy in third countries by dissuading them to increase their fossil energy prices. As the CBAM does not directly cover energy subsidies, the EU’s trading partners could opt to lower their indirect carbon prices, or subsidize fossil fuels, to compensate for the introduction of direct carbon pricing instruments.

To address tensions with international law, and ensure the equity and environmental integrity of the CBAM, amendments are needed to the CBAM Regulation. First, the definition of ‘carbon pricing’¹⁶⁰ should be extended to ‘total carbon pricing’, covering both direct and indirect carbon pricing measures. Direct carbon pricing should explicitly include carbon crediting mechanisms, to allow third countries to facilitate the reinvestment of carbon revenues in decarbonization projects.¹⁶¹ Indirect carbon pricing should be defined as the pricing mechanisms that change the price of carbon-intensive products but are not directly proportional to the GHG emissions associated with their production.¹⁶² A distinction should be made between positive and negative indirect carbon prices, to differentiate price mechanisms that increase total carbon pricing (e.g. fuel excise taxes) and those that counteract carbon price signals (e.g. fossil fuel subsidies), so as to determine ‘net effective carbon rates’.¹⁶³

¹⁶⁰Article 3, Regulation (EU) 2023/956.

¹⁶¹The World Bank, for instance, includes carbon crediting mechanisms in its definition of direct carbon prices. See World Bank, *State and Trends 2023*.

¹⁶²*Ibid.*

¹⁶³Garsous et al. *supra* n. 100.

Taking into account the objective of equalizing the carbon cost of EU and foreign producers, ‘net effective carbon rates’ in the EU would also have to be reflected in the design of the CBAM crediting mechanism. Instead of claiming a reduction in the number of CBAM certificates to be surrendered based on the total carbon prices paid in the country of origin, it is necessary to calculate this reduction based on the gap between net effective carbon prices in the country of origin compared to those in the EU. This would require the adoption of methodologies on the calculation of total carbon pricing, per industrial sector covered by the CBAM, e.g. building on the existing work of the OECD, IMF, and World Bank in this area. Adjusting CBAM obligations based on the gap between net effective carbon prices would allow the EU to cover the most relevant pricing signals for decarbonization, and thereby reduce tensions with international trade and climate law.

Acknowledgments. The author is grateful for comments by two anonymous reviewers, as well as feedback by Yueming Yan, Benoit Mayer, and Francine Hug. The research underlying this paper has benefited from the author’s involvement in projects on carbon pricing in third countries. The usual disclaimer applies.