CAPI
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Application of Border Carbon Adjustments (BCAs) to International Fertilizer Trade: Legal Challenges and Options

A *Research* Report prepared for CAPI by
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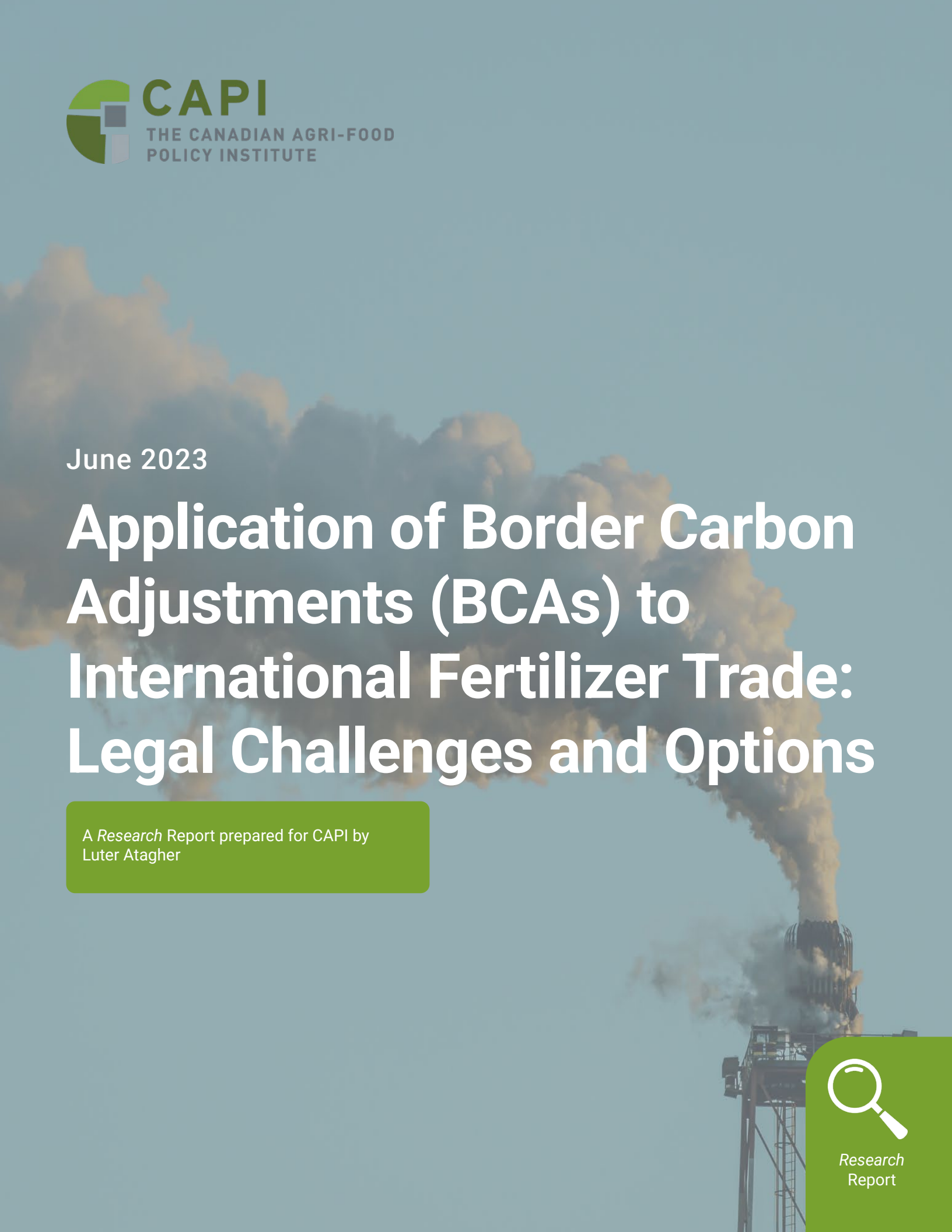

Research
Report

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To ensure the validity and quality of its work, CAPI requires all *Research* Reports to go through a peer review process. CAPI thanks the Doctoral Fellows Mentors who provided expertise, guidance, and feedback on these reports throughout the first year of this fellowship: Aaron Cosbey, Cam Dahl, Dr. Karen Hand, and Dr. Lenore Newman. The views and opinions expressed in this paper are solely those of the authors and do not necessarily reflect those of CAPI.

Note from CAPI

CAPI recognizes the importance of fostering and mentoring the next generation of thought leaders emerging from Doctoral programs across Canada, who are working in multi-disciplinary fields. Through this program, CAPI offers a small, innovative group of young students the opportunity to apply their newfound knowledge and expertise to some of agriculture's most critical policy issues.

The third cohort of CAPI Doctoral Fellows (2022-2024) was tasked with focusing their research on the intersection of agricultural trade, the environment and food security and this paper is one of the results. In light of recent trade disruptions, food security concerns and climate change commitments, CAPI is interested in how they are impacting Canadian agriculture and agri-food and the policy implications. This paper is the first deliverable in the first year of the two year program, showcasing the interdisciplinary nature of the fellows' research as it relates to the application of border carbon taxes on international fertilizer trade and how trade policy can address this.

This Fellowship is supported in part by the RBC Foundation through RBC Tech for Nature as part of CAPI's larger environmental initiative, Spearheading Sustainable Solutions.

Key Takeaways

- Border Carbon Adjustment (BCA) measures are designed to ensure that negative externalities of carbon emissions associated with the production of goods imported from jurisdictions without a carbon price are internalized.
- While the adoption of BCAs will be a source of contestation among trading partners, it also presents an opportunity for robust dialogue to integrate carbon pricing and emissions reduction in international trade. Canada is strategically positioned to play an influential role in these dialogues, considering its position as an important trading partner to both Europe and the US.
- The extent to which BCAs may be consistent with WTO law depends on key aspects of its structure and implementation. But more importantly, BCAs can be designed and implemented as a positive, cooperative mechanism for mutual accountability on GHG emissions reductions while taking into account adjustment costs.
- As an Emissions Intensive Trade Exposed (EITE) industry, the Canadian fertilizer industry will be significantly affected by the BCA Regulations that have been introduced in the EU since Canada is one of the world's largest fertilizer exporters. The adoption of BCAs by any of Canada's major trading partners would significantly impact Canada's fertilizer trade.
- Areas of emerging BCA regulations which raise concerns about discriminatory effects or market access constraints against Canadian products should be monitored for purposes of engagement with regulating States with a view to the elimination of such discriminatory effects. Of particular importance is the need to make provisions for carbon price discounts in respect of emissions captured and stored in the production of Canadian exports, and the need to clarify the discriminatory effects of pricing indirect emissions under the CBAM for Canadian exports.

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Introduction

Border Carbon Adjustment (BCA) measures, also known as Carbon Border Adjustment Measures (CBAMs), are at the heart of the triangular relationship between international trade, environment, and food security. BCAs are measures designed to ensure that negative externalities of carbon emissions associated with the production of goods imported from jurisdictions without a carbon price are internalized. BCAs are particularly significant because "the costs and risks from climate change are borne by the world at large, whereas there are few mechanisms to compel those who benefit from GHG-emitting activity to internalize these costs and risks." [1] And while the benefits of carbon reduction are global, mitigation efforts undertaken by only a few countries risk being undermined in the absence of a broad-based approach.[2]

The emergence of BCAs as a tool to address carbon leakage and ensure trade neutrality is not new and a BCA equivalent has indeed been in operation at the sub-national level in the California electricity market.[3] However, the entry into force of the Regulation establishing the CBAM in the EU on 10 May 2023 marked a watershed moment in the history of carbon pricing in international trade. The EU CBAM regulation applies the equivalent of carbon prices incurred by EU producers under the EU ETS mechanism to carbon emissions determined to be embedded in goods imported into the EU. The Government of Canada also launched consultations in 2021 to explore the

[1] Thomas Helbling, "Externalities: Prices do not capture all costs" International Monetary Fund, online <https://www.imf.org/en/Publications/fandd/issues/Series/Back-to-Basics/Externalities>

[2] Jason E. Bordoff, "International Trade Law and the Economics of Climate Policy: Evaluating the Legality and Effectiveness of Proposals to Address Competitiveness and Leakage Concerns" in Lael Brainard & Isaac Sorkin, eds, Climate Change, Trade and Competitiveness: Is Collision Inevitable? (Washington DC: Brookings Institution Press, 2009)

[3] Jefferey A Frankel, "Addressing the Leakage/Competitiveness Issue in Climate Change Policy Proposals" in Lael Brainard and Isaac Sorkin, eds, *Climate Change, Trade and Competitiveness: Is Collision Inevitable?* (Washington DC: Brookings Institution Press, 2009) 69; Andrew Prag, "The Climate Challenge and Trade: Would border carbon adjustments accelerate or hinder climate action?" Background Paper, OECD Round Table on Sustainable Development (Paris: 25 February 2020) (Online) <https://www.oecd.org/sdroundtable/papersandpublications/The%20Climate%20Challenge%20and%20Trade...%20background%20paper%20RTSD39.pdf>

adoption of BCAs.[4] This development was welcomed by the fertilizer industry in Canada, while also making some recommendations for rebates and harmonization of measurement systems.[5] Canada's largest trading partner, the United States, has also seen the latest bill tabled for a legal framework for BCAs. The proposed Fair, Affordable, Innovative and Resilient Transition and Competition Act seeks to impose a fee on imports equivalent to the domestic environmental cost determined to have been incurred by US producers for the production of specified goods and fuels.

As an Emissions Intensive Trade Exposed (EITE) industry, nitrogen fertilizer (N-fertilizer) is significantly affected by BCA Regulations and proposals. Under the EU CBAM Regulations, N-fertilizer production is one of six industrial sectors subject to carbon price adjustments in the pilot phase. While fertilizer is not listed as a covered good under the proposed US Fair Transition and Competition Act, the bill seeks to apply a BCA to natural gas – an essential feedstock in the production of ammonia and urea – the cost of which may be passed onto fertilizer producers in the US utilizing natural gas imports.

Canada is one of the world's biggest fertilizer exporters, with imports and domestic production crucial to the Canadian agri-food industry.[6] The adoption of BCAs by any of Canada's major trading partners would significantly impact Canada's fertilizer trade. On the other hand, BCAs and other measures designed to ensure trade neutrality in the context of climate action merit consideration in Canada due to the soaring carbon price incurred by the Canadian fertilizer and agri-food industry.

Background

One of the oldest economic activities in human history, agriculture perfectly encapsulates the conundrum of human interaction with nature. The use of land, water, plant, and animal life, for food production, is one of the most important means by which human life and flourishing have been secured in terms of both nutrition and wealth. Yet, because of the risks posed by human-induced climate change to agricultural productivity, both agriculture and nature have become existentially dependent on each other, and humanity on both. N-fertilizer is crucial to food security, enabling significant improvements in crop yields to meet the food demands of an ever-growing global population amid drought and decreasing arable land.[7] However, references to N-fertilizer production as an EITE Industry underscores the extent of greenhouse gas (GHG) emissions arising from both its production and use.

Applying a carbon price on fertilizer may also imply an increase in the cost of a very significant farm input, food production and consequently, worsening food inflation. Since 2020, supply restrictions, the high cost of natural gas, and sanctions on Russia and Belarus – both significant exporters of N-fertilizer – have contributed to soaring N-fertilizer prices and deepening food insecurity.[8] The key challenge for policymakers at the heart of the dilemma between the global food security crisis and the climate emergency has been how to ensure sustainable

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[4] Department of Finance Canada, "Exploring Border Carbon Adjustments for Canada", (2021), online: Government of Canada <https://www.canada.ca/en/department-finance/programs/consultations/2021/border-carbon- adjustments/exploring-border-carbon-adjustments-canada.html>.

[5] Fertilizer Canada "Fertilizer Canada's Response to the Border Carbon Adjustments Consultation" 29 October 2021 Online <https://fertilizercanada.ca/resources/fertilizer-canadas-response-to-the-border-carbon-adjustments-consultation/>

[6] Al Mussell and Angèle Poirier, "Understanding the Risks and Vulnerabilities Facing the Canadian Agricultural Fertilizer Market" (Canadian Agri-Food Policy Institute: December 2022) Online <https://capi-icpa.ca/explore/resources/understanding-the-risks-and-vulnerabilities-facing-the-canadian-agricultural-fertilizer-market/ >

[7] Johns Hopkins Centre for a Livable Future "History of Agriculture" Online – Food System Primer https://www.foodsystemprimer.org/food-production/history-of-agriculture/; Vaclav Smil, *Enriching the Earth: Fritz Haber, Carl Bosch, and the transformation of world food production* (Cambridge, MA: MIT Press, 2001).

[8] Food and Agriculture Organization of the United Nations (FAO) & World Trade Organization (WTO), "Global Fertilizer Markets and Policies: A Joint FAO/WTO Mapping Exercise" Report (2022) Online <https://www.fao.org/markets-and-trade/publications/detail/en/c/1618759/>

fertilizer production while minimizing costs to farmers and consumers. Put in other words, how minimizing costs to farmers and consumers does not undermine climate change mitigation efforts.

Carbon Pricing is widely recognized as an effective tool to address climate change through carbon emissions reduction. In general, carbon pricing policies are premised on the need to internalize negative externalities associated with carbon emissions to nudge production towards carbon efficiency. While several countries, including China, have either adopted or committed to the implementation of carbon pricing mechanisms ranging from carbon taxes and charges to emissions trading systems, it is still far from a universal practice. According to the World Bank Carbon Pricing Dashboard, existing carbon pricing mechanisms comprise initiatives of 47 national jurisdictions and 36 subnational jurisdictions, covering 23.17% of global GHG emissions.[9] As Bordoff notes, "Carbon is a global pollutant, so a ton of carbon emitted in Beijing contributes to climate change just as much as a ton of carbon emitted in New York."[10] Thus, the inadequate implementation of carbon pricing mechanisms gives rise to a free rider problem referred to as 'carbon leakage' by which carbon-intensive producers and goods gain a competitive advantage, thereby undermining climate action.[11]

In terms of policy articulation, BCAs often conflate the economic objective of ensuring the competitiveness of industries in counties with carbon pricing schemes and the environmental objective of ensuring the effectiveness of the 'polluter pays' principle as an international norm. Subjecting imports to a carbon price may be effective in addressing competitiveness concerns posed by carbon leakage. However, effectively addressing global GHG emissions requires policy convergence on emissions reduction through widespread state practice. This underscores the significance of BCAs as policy instruments for attaining trade neutrality and facilitating mutual accountability between trading partners for effective and efficient implementation of carbon pricing and other emissions reduction measures. States have long recognized the imperative of internalizing environmental costs associated with economic activity. Principle 16 of the Rio Declaration 1992 encourages national authorities to "...promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution..." albeit "...without distorting international trade and investment."[12]

WTO agreements, which recognize the right of member states to adopt measures restricting trade as a means for non-economic objectives including environmental protection, reiterate the requirement for a balance between environmental protection and the need to minimize trade distortions. The weighing required to strike a balance between environmental protection and the need to maintain trade based on non-discrimination often gives rise to disputes at the WTO concerning the use of environmental regulations for protectionist objectives. The essence of the WTO rules can be summed up as minimizing protectionism in the form of trade distortions, disguised restriction, or unjustifiable discrimination, to ensure equality of competitive conditions for foreign and imported products. As a result, the WTO, through its adjudicative process, has evolved as an important arbiter of permissible regulatory constraints on trade for environmental protection. Its adjudicative decisions represent the benchmark against which questions over the legality of BCAs have been raised.

The recent evolution of BCAs has triggered debates over the extent of their consistency with WTO law, their potential use for the protection of domestic industries rather than environmental objectives and possible inflationary impacts, especially for farm inputs and food prices. Trade concerns about BCAs border on possible

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[9] Source: The World Bank – Carbon Pricing Dashboard: Key Statistics on National, Regional and Subnational Carbon Pricing Initiatives (Online) <https://carbonpricingdashboard.worldbank.org>

[10] Jason E Bordoff, "International Trade Law and the Economics of Climate Policy: Evaluating the Legality and Effectiveness of Proposals to Address Competitiveness and Leakage Concerns" in Lael Brainard & Isaac Sorkin, eds, Climate Change, Trade and Competitiveness: Is Collision Inevitable? (Washington DC: Brookings Institution Press, 2009).

[11] Samuel Kortum and David Weisbach "The design of Border Adjustments for Carbon Prices" (2017) 70:2 Nat'l Tax J 421 at 422

[12] Rio Declaration on Environment and Development, Annex 1, Report of the United Nations Conference on Environment and Development (Rio de Janeiro, 1992) A/CONF.151/26 (Vol. I)

discriminatory effects of their implementation in contravention of WTO rules, and the risk of nullifying market access benefits which states have progressively negotiated within the multilateral trading system and more recently through Free Trade Agreements (FTAs). Canada has negotiated FTAs with both the EU and the US with extensive market access benefits. While provisions of these FTAs appear to justify the regulatory discretion of signatory states to adopt ambitious climate policies such as BCAs, there are expectations of transparency and cooperation in the adoption of environmental policies as opposed to unilateral action under WTO law and FTAs.

This report analyses legal requirements for the consistency of BCAs with WTO law. Against the backdrop of the tension between two important policy considerations competing for urgent action – climate change and food security – the report also explores procedural options under WTO law and FTAs for cooperation, mutual accountability, and efficient implementation of BCAs and emissions reduction measures in international trade.

Methodology

This report employs a qualitative document analysis of key legal and policy instruments to examine the extent to which BCAs may be compatible with WTO rules and exploration of procedural alternatives to adjudication for engagement on the implications of BCAs for climate action and food security. These instruments include the CBAM Regulation of 2023 and the proposed US BCA, WTO rules and adjudicatory decisions which may apply to key aspects of BCAs. Specifically, these include WTO rules and adjudicatory decisions governing Border Tax Adjustments, non-discrimination, and justification of environmental measures. These legal instruments, particularly WTO Rules, adjudicative decisions as well as FTAs, are analyzed to explore procedural alternatives to multilateral trade rules and adjudicatory dispute settlements to address concerns on trade neutrality, climate change and food security implications of BCAs.

Emerging Legal Frameworks for BCAs: EU & the US

This section highlights key features of the emerging legal framework for BCAs in the EU and the US. While the US proposal has not been passed into law, key provisions of the bill from which disputes may arise merit prompt consideration, in the light of Canada's trade relations with the US.

References to Domestic Carbon Pricing

The EU CBAM Regulation applies a carbon price equivalent to the prevailing price of EU Emissions Trading Scheme (EU ETS) allowances to goods imported into the EU for consumption or processing operations with effect from January 2026.[13] The carbon price under the EU ETS is determined through demand and supply of emissions allowances – each of which permits the emission of one tone of carbon dioxide equivalent – allocated or purchased by operators holding a greenhouse gas emissions permit. Under this 'cap-and-trade system', a declining limit on the total of permissible GHG emissions creates a price incentive for operators to reduce emissions, thereby retaining spare emissions allowances which can be traded for value. Failing such emissions reduction, operators must surrender allowances annually to cover the equivalent of their GHG emissions.

While the proposed US FAIR Transition and Competition Act is not an extension of a specific emissions trading system or carbon pricing mechanism to imports, it seeks to apply a carbon price equivalent to the average environmental cost incurred by US domestic producers for the production of covered fuels and goods to the carbon content of imports. Such domestic environmental cost is to be determined annually by reference to a

[13] Art.1(2), Regulation EU 2023/956 of the European Parliament and of the Council of 10 May 2023 establishing a carbon border adjustment mechanism, Official Journal of the European Union L/130/52 16.5.2023 (hereinafter, the EU CBAM Regulation)

range of compliance costs including taxes, fees and cap-and-trade systems imposed on US companies by federal, state, or local environmental laws and policy mechanisms designed to address greenhouse gas emissions.[14]

Determination of BCA Costs

Like the EU ETS, the CBAM Regulation requires importers or their representatives, who must register as CBAM declarants, to purchase CBAM certificates.[15] The price of CBAM certificates or BCA cost, is to be determined weekly by reference to average pricing trends of EU ETS allowances.[16] CBAM declarants are required to forgo the number of CBAM certificates which correspond to the emissions declared to have been embedded in goods they imported, with deductions allowed for any carbon price paid in the country of origin of the imported goods.[17] The regulation precludes an importer from taking the benefit of such deductions where carbon price rebates have been received for the same goods in the country of origin.

The BCA fee to be applied under the proposed US Fair Transition and Competition Act is to be determined either by multiplying the determined domestic average environmental cost by upstream GHG emissions (from the extraction, processing, transportation, financing, or other preparation for use) in the case of natural gas and other covered fuels; or multiplying the determined average environmental cost by the production GHG emissions (from production, manufacturing or assembly) in the case of a covered product or sector; and in the absence of reliable data on production GHG emissions for a particular product, the applicable Carbon Border Adjustment Fee for like imports shall be determined by multiplying benchmark emissions for that product by its domestic average environmental cost as determined annually under the Act.[18]

Measurement of Embedded Emissions

The EU CBAM Regulation and the proposed US Fair Transition and Competition Act both employ significantly different calculation methodologies for emissions to which BCAs are applicable. Under the EU CBAM Regulation, the calculation of emissions subject to BCA may be based on actual emissions (drawn from primary data from the production of goods) to calculate direct emissions. However, default values calculated based on secondary data representing embedded emissions may be adopted where actual emissions cannot be adequately determined, and also for purposes of calculating indirect emissions. A provision is made for the verification of emissions declarations made according to the prescribed calculation. Direct emissions have been defined as “emissions from the production process of goods, including heating and cooling consumed during the production process”,[19] while indirect emissions refer to the "emissions from the production of electricity, which is consumed during the production processes of goods.”[20]

Calculation of emissions of covered products to which a BCA fee may be applied under the proposed FAIR Transition and Competition Act appears to be based entirely on estimates rather than actual emissions: either baseline emissions, determined annually by the average GHG emissions of each sector or benchmark emissions, determined by reference to the top 1 percent emitters for each sector in the preceding year.[21] Like default values

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[14] Sec. 9902, Fair, Affordable, Innovative, and Resilient Transition and Competition Act Bill, H.R. 4534, 117th Congress (hereinafter, FAIR Transition and Competition Act)

[15] Art. 4, 5 & 23, EU CBAM Regulation, *supra* note 13.

[16] Art. 21, *ibid.*

[17] Art.6(2)c) & 9, *ibid*.

[18] Sec. 9904(a), FAIR Transition and Competition Act Bill, *supra* note 14.

[19] Art. 12(15), EU CBAM Regulation, *supra* note 13.

[20] Art. 12(28), *ibid*

[21] Sec. 9903, *ibid*

under the EU CBAM Regulations, benchmark emissions are utilized in the absence of reliable data on production GHG emissions for the product in question. Further elaboration of the Bill and development of its implementing regulations would help to clarify whether the default calculation of production GHG emissions and upstream GHG emissions are based on baseline emissions.

Based on the current draft of the Bill, BCAs appear to apply to imports by default, with general exemptions provided for imports originating from Least Developed Countries (LDCs), countries which do not impose BCAs on US products and countries considered to have laws and regulations as effective and ambitious as US Federal laws and regulations designed to limit GHG emissions.[22] The provision on exemptions may serve three purposes: as a reflection of the principle of common but differentiated responsibility (CBDR) in the implementation of BCAs; as an environmental measure to drive ambitious climate action in other jurisdictions; and as a retaliatory measure to respond to the application of BCAs to US exports by other regulating countries. In contrast, the only basis for exemptions under the EU CBAM Regulations is participation in the EU ETS, direct links between the exempt country's emissions trading system and the EU ETS or adoption of the same carbon price paid under the ETS.[23] Notably, the EU CBAM does not reflect the principle of common but differentiated responsibility (CBDR).

Application to Nitrogen Fertilizers

The first phase of the CBAM covers both direct and indirect emissions from N-fertilizer production. Further, ammonia used as feedstock for the production of urea may be calculated as emissions from such installation. CBAM coverage of N-fertilizers is indicated in Table 1:

Table 1: Fertilisers[24]

CN code	Greenhouse gas
2808 00 00 - Nitric acid; sulphonitric acids	Carbon dioxide and nitrous oxide
2814 - Ammonia, anhydrous or in aqueous solution	Carbon dioxide
2834 21 00 - Nitrates of potassium	Carbon dioxide and nitrous oxide
3102 - Mineral or chemical fertilisers, nitrogenous	Carbon dioxide and nitrous oxide
3105 - Mineral or chemical fertilisers containing two or three of the fertilising elements nitrogen, phosphorus and potassium; other fertilisers; goods of this chapter in tablets or similar forms or in packages of a gross weight not exceeding 10 kg - Except: 3105 60 00 – Mineral or chemical fertilisers containing the two fertilising elements phosphorus and potassium	Carbon dioxide and nitrous oxide

The proposed US FAIR Transition and Competition Act potentially affects Canadian Fertilizer Trade with the US through BCA costs on natural gas imports that may be passed onto fertilizer producers in the US who in turn export to Canada.[25] The US accounts for 99% of Canadian natural gas exports and over 90% of the source of

[22] *ibid*

[23] Art 2(4) & (5), Annex 2, Schedule A, *ibid*.

[24] Source: Annex I, Proposed CBAM Regulation, supra note 13.

[25] Sec.9901(6), FAIR Transition and Competition Act, *supra* note 14.

imports.[26] For N-fertilizer, Canada's largest export market is the United States, representing over 99% of exports in the last 5 years, as shown in Table 2:

Table 2: Canadian Total Exports (N-fertilizer)[27]

Products Hs 3102: **mineral or chemical fertilizers, nitrogenous**
Period: **2018-2022**
Units: **% Percentage**

	2018	2019	2020	2021	2022
United States	99.46	99.41	99.55	99.61	99.67
Australia	0.02	0.05	0.1	0.08	0.14
Indonesia	0.14	0.1	0.1	0.11	0.07
Netherlands				0.02	0.04
Mexico	0.25	0.29	0.16	0.11	0.02
Ireland	0.02	0.04	0.01	0.01	0.02
Germany					0.01
Spain			0.01	0.02	0.01
Brazil				0.01	
France (incl. Monaco, French Antilles).					

While the US also constitutes Canada's largest source of N-Fertilizer imports, Canada's import sources are more diversified. The last year witnessed a significant decline in supply from Russia (which is most likely due to the effects of the sanctions) and an increase in the percentage of imports from the US, Algeria, and more recently, Egypt.[28] The continuation of sanctions on Russia and constraints on the supply of N-fertilizer in Europe may translate to increased demand for Canadian N-Fertilizer. It may also mean increased reliance on the US and other sources of N-Fertilizer imports.[29] Table 3 shows import data on Canada's N-fertilizer imports over the last 5 years:

Table 3: Canadian Total Imports[30]

Products: **Hs 3102 - mineral or chemical fertilizers, nitrogenous**
Period: **2018-2022**
Units: **% Percentage**

	2018	2019	2020	2021	2022
United States	42.17	44.3	51.06	31.08	47.83
Algeria	2.22	1.8	0.19	1.37	14.03
Russia	28	22.4	21.64	37.97	12.2

[26] Source: Government of Canada, Trade Data Online < https://ised-isde.canada.ca/site/trade-data-online/en>

[27] *ibid*

[28] *ibid*

[29] Mussel & Poirier, supra, note 7 at 22.

[30] Government of Canada – Trade Data Online, *supra* note 26.

Netherlands	6.73	9.86	10.52	10.06	7.55
Trinidad and Tobago	3.26	3.33	3.03	4.88	5.11
Germany	4.75	6.03	4.92	4.95	3.29
Oman (formerly Muscat and Oman)	0.05			0.34	2.05
Belgium	1.24		0.19	0.06	1.74
Qatar	0.86	0.65	0.33	0.53	1.42
Norway	1.71	1.43	1.77	1.46	1.41
Bahrain					1.39
Chile	0.46	0.56	0.56	0.5	0.59
Saudi Arabia	0.33	0.27	0.14	0.68	0.47
France (incl. Monaco, French Antilles)	0.28	0.15	0.03	0.01	0.25

In sum, Canadian N-fertilizer exports are more likely to be impacted significantly by the adoption and application of BCAs to natural gas and possibly, N-fertilizer imports in the US. The degree of impact of the EU CBAM on Canadian N-fertilizer exports depends on the extent to which Canada's N-fertilizer exports to the EU increase. On the other hand, Canada's adoption of BCAs will affect N-fertilizer imports mostly from the United States and a diverse set of other import sources.

Analysis of BCAs under WTO Disciplines

This section weighs the extent to which features of the emerging BCAs highlighted above may be consistent with WTO disciplines as stipulated in specific rules and decisions of the Appellate Body. Specifically, the following analysis considers aspects of WTO law applicable to BCAs, namely, Border Tax Adjustments under Articles II & III:1 & 2, non-discrimination under Article III:4, and justification of trade-restrictive environmental measures under Article XX, GATT, 1994.

Border Tax Adjustments (Article II:2(a) and III:1 & 2 of the GATT, 1994)

Articles II:2(a) & III:1 & 2 of the GATT lay down the framework for Border Tax Adjustments (BTAs), which permit WTO member states to charge internal taxes and other fiscal or regulatory measures applicable to 'like domestic products' on imports and to relieve exported products of such internal taxes and charges based on the understanding that exported products will be subject to the internal taxes and charges of destination countries. Thus, BTAs have been regarded as putting into effect the "destination principle".[31]

Although generally referred to as "tax adjustments", Art. II:2(a) & III:1 of the GATT permits fiscal adjustments not only in respect of internal taxes, but also charges, laws, regulations, and requirements applicable to the sale of goods within the territory of the regulating state. In this sense, these provisions of the GATT governing BTAs are broad enough to cover BCAs, which extend, to imports, the application of internal carbon prices, whether such price is through a tax or regulatory mechanisms such as Emissions Trading Systems. For instance, neither the CBAM nor the EU ETS is a tax. However, adjustments under the CBAM slide seamlessly into the broad scope of Articles II:2(a) & III:1 & 2. It is doubtful that the US approach, which is not based on the extension of a specific internal tax, charge, or regulatory requirement applicable to domestic products, but rather, seeks to apply a Border

[31] GATT Secretariat, "Border Tax Adjustments: Report of the Working Party Adopted on 2 December 1970" (L/3466)

Carbon Adjustment fee determined specifically for imports based on annual average “environmental cost” incurred across entire sectors.

In any case, BCAs are quite simply carbon price-specific variants of BTAs.[32] States adopting these measures have put into effect the destination principle for carbon pricing, to the extent that they subject imports to the same internal carbon prices applicable to domestic 'like products'. The argument in favour of regulating states is that the destination principle, which is recognized under Art. III:1 defers to states on the application of internal taxes, charges, laws, regulations, and requirements (which would include carbon pricing) to imported and domestic products. The key requirement is that they should not be applied to afford protection to domestic production. In other words, their application must be extensions of domestic climate regulations and policies applied on an equal footing to imports.[33]

Whether a fiscal or regulatory measure has been applied to afford protection to domestic industries is a question of fact to be determined on a case-by-case basis. WTO jurisprudence stipulates two important criteria for the application of BTAs under relevant provisions of the GATT: First, internal taxes and other charges are not applied to foreign products in excess of those applied to 'like domestic products'. Second, the administration of similar taxes, charges or regulations should not translate to a disparity of beneficial outcomes between domestic and foreign producers, such as flexible compliance procedures, exceptions, and criteria for incentives which may be extremely difficult for foreign firms to comply with.[34]

Transparency in the processes for determining carbon price and carbon content of products is key to the satisfaction of these requirements. Such transparency would be necessary to address any doubts as to whether BCAs are being used to make up for the high costs of domestic production that are unconnected to climate mitigation efforts. Further, the application of BCAs to afford protection to domestic producers may also give rise to national treatment claims under Article III:4 of the GATT.

Non-Discrimination (Article III:4 of the GATT)

Article III:4 enshrines the fundamental principle of non-discrimination in trade law, which requires that imported products be accorded “treatment no less favourable than that accorded to like products of national origin” in the implementation of border adjustments.

Less favourable treatment may arise from a variety of claims relating to how a BCA is either structured or administered. For instance, one ostensibly discriminatory aspect of the EU CBAM is the requirement for importers to purchase CBAM certificates to cover indirect emissions associated with electricity purchased for the production of imported goods, whereas the EU ETS does not cover indirect emissions related to electricity generated outside the regulated production facility.[35] Also, the EU-ETS also discounts from the calculation of the emissions of an installation of domestic producers emissions that have been transferred to a carbon capture and storage facility, whereas, no such provision for a discount has been made under the EU CBAM Regulation for emissions captured and stored in the production of imported goods.[36] This is likely to be considered discriminatory, as it omits an important exception available to domestic producers.

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[32] Michael A. Mehling, et al, “Designing Border Carbon Adjustments for Enhanced Climate Action” (2019) 113:3 American Journal of International Law 433 at 457.

[33] Joost Pauwelyn, “U.S. Federal Climate Policy and Competitiveness Concerns: The Limits and Options of International Trade Law” (2007) Nicholas Institute for Environmental Policy Solutions, Duke University, NI WP 07-02

[34] Appellate Body Report, *Brazil – Certain Measures Concerning Taxation and Charges* (Brazil — Taxation (EU)) (AB-2017-7/8).

[35] Andrei Marcu et al, “Border Carbon Adjustment in the EU: Indirect Emissions in the CBAM” European Roundtable on Climate Change and Sustainable Transition (ERCST) 05 July 2022 Online < https://ercst.org/indirect-emissions-in-the-eu-cbam-2022/>

[36] See Commision Implementing Regulation (EU) 2018/2066 of 19 December 2018, Article 49 and Annex IV, Section 17.

Further, the proposed US FAIR Transition and Competition Act seeks to calculate BCAs by reference to average sector-wide environmental costs arising from a wide range of laws and policies. There is no specific domestic carbon price applicable to US products. To the extent that environmental costs borne by domestic producers are not ascertained based on similar average costs determined for imports, concerns over discriminatory treatment may arise. Such dissimilar provisions concerning domestic producers and importers in the administration of Caron Pricing regimes are likely to raise concerns as to their consistency under Art. III:4 of the GATT.

Justification of Environmental Measures (Article XX (b) & (g) of the GATT)

BCAs found to be inconsistent with obligations under Articles II & III may be assessed under Art. XX to determine whether such discriminatory effects are justifiable. Article XX (b) & (g) provides for such exceptions measures necessary for the protection of human, animal, and plant life, or relating to the conservation of exhaustible natural resources, provided that such measures do not constitute arbitrary or unjustifiable discrimination or a disguised restriction on trade. Climate measures fall within the scope of these exceptions. The challenge is how specific discriminatory aspects of a measure, and the justifications preferred, may be construed by WTO Panels and the Appellate Body.

One possible basis for justification for dissimilar treatment in the CBAM, which may be gleaned from recitals of the EU CBAM Regulation, relates to the imperative of resource efficiency in the administration of the CBAM.[37] However, administrative efficiency and regulatory costs may be inadequate reasons to justify a dissimilar treatment under WTO law. In *US – Gasoline*, a dissimilar regulatory treatment for foreign and local refiners, by which foreign refiners were not permitted individual baselines allowed to local refiners, was construed as unjustifiably discriminatory, despite the Appellate Body acknowledging that the reasons for the dissimilar treatment – administrative difficulties associated with verifying foreign individual baselines – were "doubtlessly real."[38] A minimum requirement for justification is that the regulating state explores cooperative arrangements with trading partners, to mitigate administrative problems envisaged, to the point where it encounters unwillingness on the part of other states to cooperate. Also, regulatory requirements that imply higher compliance costs for imports may be interpreted as discriminatory.[39] In *Brazil – Taxation (EU)*, the availability of certain incentives based on criteria that were not feasible for foreign producers to satisfy, was construed as unjustifiable discriminatory treatment.[40]

Another possible ground for justification relates to the objective of ensuring the adoption of effective climate policies by trading partners. This may require a flexible approach which takes into account local conditions in other countries including diverse emissions reduction mechanisms in various states.[41] Such a flexible approach accommodates a policy mix of emissions reduction mechanisms that may be 'comparable in effectiveness' but not necessarily the same as the carbon pricing policy of the regulating state,[42] thereby satisfying the requirement of WTO law that environmental measures are not structured and applied to have intended and actual coercive effect on specific policy decisions of foreign governments, and therefore arbitrary. The argument for the CBAM may be that its application would be based on the carbon content of imported products, and thus any

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[37] Recitals 22, 23, 31 & 41, EU CBAM Regulation, supra note 13.

[38] Appellate Body Report, *United States – Standards for Reformulated and Conventional Gasoline* (US – Gasoline) (AB-1996-1) at 27-28.

[39] *Ibid.*

[40] Brazil — Taxation (EU).

[41] Pauwelyn, s*upra*, note 33.

[42] Daniel Rosenbloom, et al, "Why carbon pricing is not sufficient to mitigate climate change—and how 'sustainability transition policy' can help" (2020) 117: 16 PNAS 8664

mechanism which reduces emissions associated with imported products will be of benefit to the importer under the CBAM.

One question to consider is whether the emerging legal frameworks for BCAs require trading partners to adopt laws, policies, and measures "essentially the same" as that of the regulating state.[43] In this context, the grounds for exemptions under the EU CBAM and the proposed US FAIR Transition and Competition Act, which exempt imports from specific countries based on parity with their carbon pricing mechanisms or emissions reduction framework, could be scrutinized under this requirement.[44] A related question concerning carbon price is whether, in the light of different considerations taken into account to determine carbon prices in different countries, BCAs force differently situated countries to adopt essentially the same comprehensive regulatory program of the regulating state.[45] It is likely that BCAs may be justified on the ground that they simply ensure trade neutrality by levying on imports carbon prices applicable to domestic products based on the destination principle under Art. II & III of the GATT. But justifying BCAs under these provisions is not without controversy due to structural differences in carbon pricing and emissions reduction mechanisms of various countries.

A suggested alternative approach to BCAs is the adoption of a minimum mandatory carbon price or an international carbon price floor.[46] However, multilateral agreements at the WTO have been quite few and far between since the Doha Round. On the other hand, a unilateral BCA measure with nothing more than a coercive effect may also be limited in terms of effectively reducing carbon emissions. In the current context of N-fertilizer trade for instance, with supply restrictions and increasing demand, a coercive approach to climate action may simply divert the supply of N-fertilizer to alternative markets and disincentivize cooperation.

Beyond Legal Consistency: Alternatives for Cooperation

Notwithstanding the intense legal debates and controversies they elicit, pertinent questions about BCAs such as their effectiveness in reducing GHG emissions and implications for food security may be better addressed outside the context of the determination of their compliance with WTO law. The process of adjudication at the WTO was designed primarily as an enforcement mechanism to support trade liberalization,[47] and is quite limited in terms of rules and flexibility to address policy concerns that have emerged under different socio-economic realities. However, WTO law and FTAs provide insights into procedural options that are designed to facilitate transparency, mutual accountability and cooperation among trading partners.

The Appellate Body's emphasis on the need to "have prior consistent recourse to diplomacy as an instrument of environmental protection policy"[48] underscores the significance of alternative institutional processes to cooperative arrangements on BCAs. These cooperative mechanisms are all the more significant considering the deadlock in the WTO Appellate review process following a persistent US veto on the appointment of new members required to constitute the Appellate Body. Mechanisms for consultations and cooperation, in which member states are encouraged to accord sympathetic considerations to representations made regarding measures,[49] may enable more constructive dialogues to effectively address the climate emergency alongside the food security crisis. Various committees at the WTO, foster interactions and provide useful avenues for the

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[43] United States – Import Prohibition of Certain Shrimp and Shrimp Product (US – Shrimp) (AB-1998-4), 64

[44] See Sec.9904, FAIR Transition and Competition Act, *supra* note 15; Art. Art 2(4) & (5), Annex 2, Schedule A, *supra* note 13.

[45] Ibid at 65

[46] Ian Parry, Simon Black, and James Roaf, "Proposal for an International Carbon Price Floor Among Large Emitters" (International Monetary Fund (IMF) Staff Climate Notes 2021/001) Online < https://www.imf.org/en/Publications/staff-climate-notes/Issues/2021/06/15/Proposal-for-an-International-Carbon-Price-Floor-Among-Large-Emitters-460468 >

[47] Joost Pauwelyn, "The Transformation of World Trade (2005) 104:1 Michigan Law Review 1 at 22-23

[48] US-Shrimp, supra note 43 at 66.

[49] Article 4(2), *Annex 2 of the WTO Agreement - Understanding on rules and procedures governing the settlement of disputes*, 1994.

resolution of trade tensions concerning BCAs such as the Committees on Market Access and The Committee on Trade and Environment (CTE). Some progress is being made in this direction. Notably the Trade and Environmental Sustainability Structured Discussions (TESSD) – a platform for dialogue within the WTO's Trade and Environment Committee, comprising 74 WTO members, in which Canada plays a coordination role.[50] The TESSD draws wide participation, including China, which recently proposed discussions on trade aspects of environmental measures.[51] Finally, FTAs establish some mechanisms for the resolution of disputes which serve as alternatives to the WTO.

As a multilateral setting with diverse interests, the WTO may not always serve as an appropriate for all discussions. Accordingly, FTAs such as CETA, CUSMA and CTPPP, provide alternative settings specific to trade relations between FTA signatory states and can be utilized for synergetic arrangements in the structure and implementation of BCAs between Canada and its major trading partners. While these FTAs provide for regulatory autonomy and discretion to adopt trade-restrictive measures for climate change mitigation, transparency, consultations and a cooperative approach to formulating and implementing trade-restrictive environmental policy are also required. Mechanisms within these FTAs as well as informal bilateral frameworks such as the EU-US Trade and Technology Council, provide forums for Canada's trading partners to discuss and explore solutions to concerns about BCA measures.

Conclusions and Policy Recommendations

There is room for their adoption and implementation under WTO Rules. The extent to which BCAs may be consistent with WTO law depends on key aspects of its structure and implementation. But more importantly, BCAs can be designed and implemented as a positive, cooperative mechanism for mutual accountability on GHG emissions reductions while taking into account adjustment costs.[52] The following policy options may be worth considering, in the light of the application of Carbon Pricing to N-fertilizer trade through BCAs:

- *Cooperation with Key Trading Partners on BCAs*:
  The adoption of Border Carbon Adjustments will be a source of contestation among trading partners. At the same time, it presents an opportunity for robust dialogue to integrate carbon pricing and emissions reduction in international trade. Canada is strategically positioned to play an influential role in these dialogues, considering its position as an important trading partner to both Europe and the US, two significant trade partners with which the country has important FTAs. The mechanisms for cooperation under these FTAs can be utilized effectively for transparency, confidence building and possible policy convergence. Points of cooperation may include measuring standards for carbon emissions, policy convergence on a minimum carbon price, monitoring the effectiveness of BCAs for climate mitigation, and measures to address distributional effects, including negative implications for global food security.

- *Agricultural Support:*
  Rising fertilizer costs due to soaring carbon prices and geopolitical factors risk reducing production output for farmers and global food insecurity. Extensive support to farmers in the form of innovation for fertilizer use, and to fertilizer producers in the form of investment in carbon-capture-and-storage facilities or 'green hydrogen' via electrolysis using water or nuclear energy for ammonia production,[53] would be

[50] WTO Trade and Environmental Sustainability Structured Discussions, "Summary report 2022" 30 November 2022 (online) < https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/INF/TESSD/R14.pdf&Open=True>

[51] WTO - Committee on Trade and Environment, "A Proposal for Dedicated Multilateral Discussions in Trade Aspects and Implications of Certain Environmental Measures" Communication from China, 13 March 2023

[52] Prag, *supra* note 3 at 17.

[53] Currently being explored by Yara International ASA in Porsgrunn, Norway. See Yara, "What you need to know about green fertilizers" Online < https://www.yara.com/sustainability/transforming-food-system/green-fertilizers/what-you-need-to-know-about-green-fertilizers/#:~:text=How%20are%20green%20fertilizers%20produced,electrolysis%20based%20on%20renewable%20electricit

essential. Policy interventions designed to support fertilizer producers and farmers should follow close engagement and agreement with farmers and the fertilizer industry stakeholders.

- *Areas of Discrimination and Trade Barriers Against Canadian N-Fertilizer Trade:*
  Areas of emerging BCA regulations which raise concerns about discriminatory effects or market access constraints against Canadian products should be monitored for purposes of engagement with regulating States with a view to the elimination of such discriminatory effects. Of particular importance is the need to make provisions for carbon price discounts in respect of emissions captured and stored in the production of Canadian exports, and the need to clarify the discriminatory effects of pricing indirect emissions under the CBAM for Canadian exports. Litigation albeit as a last resort to protect the market access rights of the Canadian fertilizer industry under WTO Agreements and FTAs.

y.> ; also a policy option for Canada's long term Hydrogen Strategy. See Natural Resources Canada, "Hydrogen Strategy for Canada: Seizing the Opportunities for Hydrogen – A Call to Action" December 2020 online < https://natural-resources.canada.ca/climate-change-adapting-impacts-and-reducing-emissions/canadas-green-future/the-hydrogen-strategy/23080#>

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